The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 31. JULY 30, 1932. VOL. 12.

THE DETECTION OF THE SOURCE OF INFECTION IN TUBERCULOUS MILK*

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The subject of my paper is one that has received a progressively increasing amount of attention since it became definitely established that tubercle bacilli in milk could and did produce tuberculosis in man. The first attempts to trace tubercle infection to its source systematically were made by a number of the large County Boroughs under special powers, obtained by Act of Parliament, known as the Tuberculous Milk Clauses. These powers were necessary because while a Local Authority could deal with the question of infection occurring in milk produced within its own area, it had no power to examine herds outside its district supplying diseased milk for consumption within that district.

In this way began the collection of bulk samples of milk for biological examination for the presence of tubercle bacilli, the following up of infected samples to their source, and the clinical examination of the herds concerned, with the object of detecting the source of infection. The great value of this procedure as a preventive measure in tuberculosis in children I do not think can be questioned, but more particularly those engaged in it realised that the bulk sampling of milk for the detection of udder tuberculosis was unsatisfactory for a great many reasons.

In 1925 the Milk and Dairies (Consolidation) Act of 1915 became operative, revoked the Tuberculous Milk Clauses and placed the responsibility for the elimination of infection from milk on the Local Authority in whose area the milk was produced. By this statute Local Authorities have the opportunity of collecting samples of milk for biological examination for the presence of tubercle direct from each herd in their district, and by so doing many of the difficulties arising from the collection of bulk samples are avoided. This is the procedure which has been adopted in Nottinghamshire, and I propose giving a brief account of our methods and the results obtained for the year 1931, with an attempt to explain some of the reasons for our failures.

* Paper presented to the Lancashire Division, N.V.M.A., at Manchester, May 25th 1932.

THE COLLECTION OF SAMPLES.

The samples are collected at the farms in the morning and represent the mixed milk of the herd. They are despatched by rail the same morning to the Pathological Institute, at which they arrive the same afternoon for biological examination.

During 1931, 1,288 mixed milk samples were collected and submitted for biological examination. Of that number, 56 caused premature death of the guinea-pigs before there was sufficient time for tuberculosis to develop. Of the remaining 1,232 samples, 108 (or a percentage of 8·76) were found to contain tubercle bacilli. The correct percentage, however, of tuberculous mixed samples should be 8·84, because one cow suffering from udder tuberculosis was reported by the milk producer to the milk sampler and her milk was not included in the herd sample.

As soon as possible after receiving reports that certain samples were found to contain tubercle on biological examination, visits are made to the farms concerned and the cows implicated, along with any cows added to the herd since the sample was collected, examined. One great advantage of sampling at the farm is that the number of cows contributing to the sample is known, a factor which greatly facilitates enquiries at the farm. Before proceeding to examine the herd, I always enquire whether any of the cows contributing to the herd sample have left the premises, and if so, their movement is checked by an examination of the Records Book which each stock owner is required to keep in accordance with the provisions of the Movement of Animals (Record) Order of 1925. Where a cow has been sent to the knackers, enquiries are made at the knackery with the object of ascertaining whether the cow suffered from tuberculosis. In this way a great deal of extremely useful information is collected which is of special value in certain cases. The herd is then examined clinically; individual samples of milk are collected from any cows which are suspected of passing tubercle bacilli in their milk, and group, or control samples are taken from the remainder of the herd, so that if one has failed to find a cow passing tubercle bacilli in her milk, and one still exists in the herd, tubercle infection should be found in one of the group samples on biological examination.

PROCEDURE IN THE LABORATORY.

Samples from individual cows suffering from udder tuberculosis, or which are suspected to

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be so suffering, are examined microscopically for the presence of tubercle bacilli. Where tubercle bacilli are detected, the cow is immediately dealt with under the terms of the Tuberculosis Order of 1925. When the examination indicates that the sample is definitely negative, a portion of it is added to one of the group samples from the herd in order to ensure that no possible source of infection is missed. If no tubercle bacilli are found but the cells and their arrangement are suspicious, the sample is sent for biological examination, along with, but separate from, the herd group samples.

In the clinical examination of the herds arising from 103 of the 108 tuberculous mixed samples, 170 individual samples were examined microscopically, 79 of which were found to contain tubercle bacilli, 10 were found to contain acid-fast bacilli other than tubercle and four other bacteria. Typical cell groups were found in 72 of the tuberculous samples. Of the negative slides, six showed typical groups (although it was recorded that in two of these cases only one typical group was seen) and four atypical groups. Eighteen microscopically suspicious samples were sent for biological examination, five of which were reported tuberculous. Of the total of 84 tuberculous individual samples, 79 (or 94·04 per cent.) were found to contain tubercle bacilli on microscopic examination. No records were kept of the microscopic examination of individual samples in five cases.

THE RESULTS OBTAINED

In tracing the source of infection in the 108 tuberculous samples already referred to, 181 visits were made to 148 farms and 1,956 cows examined. In 84 cases (or 77·7 per cent.) a definite source of infection was traced, resulting in the detection of 88 cows affected with udder tuberculosis, eight with clinical pulmonary tuberculosis, and two with tuberculous emaciation. In 24 tuberculous samples no source of infection was traced, but in 13 of these cases cows had been moved off the farms or carcasses sent to the knackers, which may have suffered from udder tuberculosis, or been passing tubercle bacilli in the milk. There remains, however, the very interesting group of 11 cases, to which I shall refer later on, where it was stated no change had taken place in the herd between the collection of the herd sample and the veterinary examination.

In 70 instances a cow, or cows, affected with tuberculous mastitis was found on the first examination of the herd, in 12 cases on the second visit, in four cases on the third, and in one case four examinations were made before the culprit was detected. In three of the above cases two tuberculous udders were detected in the same herd, one at the first visit and one at a subsequent visit (in one case at the second, one at the third and one at the fourth). In estimating the value of a clinical examination for the detection of tuberculous mastitis, it is well to remember that the second case found at a subsequent visit may not have been passing tubercle bacilli in the milk when the mixed milk sample was collected, and if such were the case, it is highly probable that the cow would show no clinical evidence of udder tuberculosis when the herd was first examined. I have mentioned these instances advisedly because it raises the question of the difficulty of diagnosing certain types of udder tuberculosis, which has given rise to so much uninformed, unjustified and unfair criticism concerning the great service our profession can render to humanity in the detection of cows suffering from tuberculosis of the udder. Any person engaged in this work knows perfectly well that such cases, although rare, do occur, and that no amount of skill on the part of the clinician could ever lead to their detection. Without clinical evidence of a condition, it is impossible by clinical methods to determine its presence, and until there is clinical evidence of udder tuberculosis there is no logical reason for collecting a sample of milk or secretion from a particular cow for microscopical or biological examination. It is obvious that when a small number of tubercle bacilli reach a quarter of a cow's udder, they must operate for a variable period, but in many instances a considerable one, before there is any clinical evidence of their presence, during a good part of which time tubercle bacilli are being passed in the milk.

Having given you a brief statement of the tangible results of the investigation of 108 tuberculous mixed milk samples, I now propose to examine the causes of our failures and to try to show that a very large percentage of them cannot be attributed to any lack of knowledge or skill on the part of the veterinary surgeon examining the herd. I think it much better that we, as a profession, should make it perfectly clear that we cannot expect success in every case, even where there is no change in the cows comprising the herd between the collection of the sample and the veterinary examination, because by so doing we will disarm a good deal of adverse criticism concerning the value of veterinary inspection for the detection of udder tuberculosis, which in many cases seems to be based on a small proportion of failures. The view held by many is that when a bulk sample of milk is found on biological examination to contain tubercle bacilli, there must be a cow in the herd suffering from udder tuberculosis or passing tubercle bacilli in her milk, and that if the inspecting veterinarian is unable to find the culprit on his first visit, then veterinary examination for the purpose of tracing the source of tubercle infection in milk

is of little value. To me, and I am sure to you also, such an attitude is indefensible, although I have often heard it expressed. The very source of the infection in the milk may have nothing whatever to do with the cows at all, but may be of human origin.

In early cases of infection of the udder the types of cases that present the greatest difficulty of diagnosis are (1) tuberculosis of a fore quarter; (2) mixed infection of a quarter; (3) non-tuberculous mastitis of one quarter and tuberculous mastitis of another quarter of the same udder; (4) the very rare cases where the infection enters the udder by way of the supramammary lymphatic gland, and (5) tuberculosis in the udder of a " dry " pregnant cow.

In these early cases it is of little use to go on examining udder after udder in the hope that a typical tuberculous udder will appear. If this is the attitude adopted a great many will be missed. One must be alert to detect the slightest abnormality in a quarter and one cannot dismiss it as non-tuberculous until convinced that some other cause than the tubercle bacillus is responsible.

Tuberculosis of a Fore-Quarter.

Tuberculosis affects the fore-quarter much less frequently than the hind-quarters. In my series of 88 cases, 20 were affected in the fore-quarters, 12 being in the left fore and eight in the right fore-quarter. The fore-quarters, on account of their shape and position, are more difficult to compare with one another and to palpate, and the supramammary lymphatic gland does not assist one as much as it does in the examination of a hind-quarter. I still find the best method of examining the fore-quarters is to commence one's examination from behind, which is, after all, the most convenient as that is the position in which the hind-quarters are examined. If any induration or enlargement is detected the quarter should be examined from the side by palpation and comparison with its neighbour. In all the cases of tuberculosis of a fore-quarter I have encountered, the entire quarter has been affected, resulting always in induration, accompanied by either enlargement or atrophy of the quarter, and thereby differing from certain types of tuberculosis in a hind-quarter where only a portion of the quarter is affected.

In detecting these early changes in the fore-quarter, it is well to remember that it is usually impossible, by drawing the fingers along the lower aspect of the cow's normal udder, to distinguish between hind- and fore-quarter, but if the fore-quarter is slightly enlarged and the same process be repeated, one can generally feel a slight fulness when one reaches the fore-quarter, that is, its posterior boundary can be determined. Where the fore-quarter is atrophied, the converse is the case. This I find a help.

It may be of interest to mention here that in every case of tuberculosis of a fore-quarter I have met, I have been able to demonstrate the tubercle bacillus in the milk from the suspected quarter by microscopic examination, which rather suggests that the disease is more advanced before it has been detected, or, as suggested above, as the entire quarter is affected the bacilli are more numerous in the milk.

Mixed Infection of a Quarter.

My observations tend to show that ordinary acute mastitis and tuberculosis rarely occur in the same quarter; that the tubercle bacillus does not develop in the diseased quarter until it has reached the sub-acute or chronic stage, and in the early stage of tuberculosis this makes the condition very difficult, if not impossible, to diagnose. When the tubercle bacillus has just commenced its activities in a quarter indurated as a result of an attack of non-tuberculous mastitis, it is obvious that the induration cannot show any of the characteristics of tubercle until the tubercle bacillus has had sufficient time to produce some clinical evidence of its presence. The induration in a quarter affected with ordinary mastitis decreases as time progresses until, if the disease has been sufficiently acute, the quarter eventually becomes shrivelled and distorted. I agree with H. T. Matthews, *Veterinary Record*, Vol. 10, No. 18, page 382, that the tubercle bacillus does not seem to attack a quarter when it has reached this stage, possibly because of the reduced blood supply to that quarter, and the consequent reduction in the lumen of the vessels making the entrance of the bacilli more difficult. When the tubercle bacillus does attack an indurated quarter the induration becomes harder, increases in size, and in some cases feels nodular, but the tuberculous increase in size will depend on the amount of shrinkage that has taken place in the quarter before it was attacked by the tubercle bacillus. In these cases I often find the supramammary lymphatic gland a help in induration of a hind-quarter. In the acute stage of ordinary mastitis the gland is always enlarged, but, as I mentioned before, acute mastitis and tubercle do not seem to exist in the same quarter. When the acute stage passes the lymphatic gland decreases progressively in size, and this seems to be the stage when tubercle may develop in the quarter. If this does happen, then the supramammary gland begins to increase in size and this is progressive with the development of tubercle in the quarter, so that if one finds an enlarged supramammary gland with an indurated quarter which has suffered from mastitis, the probability is that it is a mixed infection. I am quite prepared to admit that these cases present difficulty in differential diagnosis.

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Non-Tuberculous Induration of one Quarter and Tuberculous Mastitis of another Quarter of the same Udder.

Two or three different kinds of mastitis affecting different quarters of the same udder are not common, and this very fact tends to influence one against the probability that one of the quarters is tuberculous. There can be no difficulty in advanced or definitely clear-cut cases where one gets a typical shrivelled and indurated quarter as a result of a previous acute mastitis, and a greatly enlarged and indurated tuberculous quarter, but the cases to which I refer are those in which the history of a definite mastitis in one quarter appears to offer an explanation for the slight induration in its neighbour, and this seems such a reasonable assumption that one falls into the trap only too readily. In order to detect these early cases of tubercle in one quarter where another quarter (or quarters) of the same udder has suffered or suffers from a different infection, it is necessary to examine each quarter, not as if it were part of the whole udder, but as a separate entity, and where there is the slightest doubt collect separate samples from the individual suspected quarters for microscopic examination.

Infection through the Supramammary Lymphatic Gland.

Tubercle infection may, and does enter the udder by way of the supramammary lymphatic gland. When the bacillus reaches the lymphatic gland it appears to operate there for a very considerable period before the udder shows any clinical evidence of tubercle. In order to detect this particular type of tubercle it is advisable always to feel for the supramammary lymphatic gland, and if infected, as a rule, except in very fat or young cows, it can be palpated. In early cases of this particular type of tubercle it is frequently difficult to demonstrate tubercle bacilli in the milk owing to the small amount of mammary tissue affected.

Tubercle Bacilli in the Udder of a "dry" pregnant Cow.

The rapidity of the development of tubercle in the udder depends on the route of infection, the number and virulence of organisms that reach the udder, and theoretically on the constitutional and local tissue resistance of the subject, but, generally speaking, there is a relationship between the rapidity of growth of the tuberculous process and the amount of milk secreted by the mammary tissue, the most rapid development being just after calving. If the udder becomes affected towards the end of the lactation period the resulting lesion will develop very slowly, and if the milk from such a case has been included in the herd sample the cow may be dry when the herd is examined clinically for the detection of the source of infection. This type of case is frequently difficult to detect because tubercle of the udder is most common in cows that have had three or more calves, that is, when the udder has reached its greatest functional activity, and when such a cow is being "dried off" prior to calving, the udder nearly always shows some unevenness or irregularity. When induration is present it has less character on palpation than in a lactating udder that has been milked out, on account of the physiological activity taking place in the udder in preparation for the next lactation period. The microscope is not so helpful here as in the examination of milk from a tuberculous quarter of a lactating udder, because the secretion as a rule is scanty, frequently viscid in character, and contains an enormous number of cells. The tubercle bacilli are as a rule scanty, and it is like looking for the proverbial needle in a haystack. Cell groups in the secretion from an early case of tubercle in a dry udder are not common, but where they are found they are of the greatest significance and indicate almost certainly that the quarter is tuberculous. In these cases where I suspect that the udder is tuberculous I ascertain when the cow is due to calve and examine her again soon after calving.

Cases where there had been no change in the herd, but no source of infection could be found.

In my series of 108 cases, no source of infection could be traced in eleven cases, although it was stated that no change had taken place in the herd. In each case after the herd had been examined clinically, a direct teat sample was collected from the cows concerned, but was found negative on biological examination. It is highly probable that in a proportion of these cases changes did occur in the herd which had either been forgotten, not recorded for future reference, or wilfully withheld with ulterior motives; there still remains, however, quite a large percentage where some other explanation must be sought.

In an article published by the late Dr. Stenhouse Williams in the *Veterinary Record*, 1928, page 293, it is stated that 1·53 per cent. of apparently healthy cows pass tubercle bacilli in their fæces, and it is easy to understand how milk may become contaminated from this source. Infection of the kidneys where tubercle bacilli are being passed in the urine, or a tuberculous sinus, especially in the hind-quarters, may contaminate the milk. Such cases, I think, explain a large number of the instances where no source of infection can be found. Another possible reason is that there may be a cow, or cows, passing tubercle bacilli in the milk intermittently. Such cases, I believe, have been recorded, but, so far, I am not aware of having encountered any, and while I have a perfectly

open mind on the subject, I do feel a little sceptical. I would like very much to have your views on this question.

I did have one case where the mixed milk sample was tuberculous biologically and a control sample from the same cows was negative, but as one of the cows had a tuberculous sinus communicating with the right popliteal lymphatic gland I presumed that bacilli from the pus were the source of infection in the positive herd sample.

In these obscure cases one must not forget the possibility of infection of human origin. During 1931 I had one case where the milk was infected from two sources. After I had detected and slaughtered two cows suffering from tuberculosis of the udder, the control sample still remained tuberculous and when I visited the farm to re-examine the herd, I noticed that the man had gone who on previous occasions had drawn the samples for me. On enquiry as to the cause of his absence I was informed that he had been admitted to a sanatorium. My next sample was reported free from infection.

Prior to 1931, I have had three cases of tubercle bacilli in the milk from a human source, one being a case of lupus on the hand of one of the milkers.

In conclusion, I wish to thank you very much indeed for the patient hearing you have given me. I am confident that my labour in preparing this paper will be justified by the knowledge we shall gain in the discussion which is to follow.

Discussion

Mr. R. C. Locke, in opening the discussion, said:—

In the first place, I would like to convey my appreciation to Mr. Torrance for the very interesting and instructive paper which he has given us this afternoon. The subject is a vital one from the point of view of the profession, and one which has been getting a great deal of extra publicity lately.

As regards the repealing of Milk Clauses, I very much fear that there is now more delay in getting the herds examined than was previously the case in areas where the Clauses were in force. This would not be so important if the Milk and Dairies (Consolidation) Act had resulted in a uniform system being adopted by all Authorities, both County and Borough, for the whole of the country, but I am afraid that is far from being the case.

The method adopted in Nottinghamshire should be carried out everywhere, for I am of the opinion that bulk sampling is an essential part in the elimination of tuberculosis in milk. Routine inspection can, and does, do a great deal in this respect and also in educating the farmer, but unless bulk sampling is done in conjunction with routine inspection, many sources of infection will be missed; and routine inspection should be done at least quarterly. Probably the greatest drawback to the wholesale adoption of some such scheme in many counties is financial, but these counties are content to pay large sums out annually in other ways—for example, the treatment of children suffering from tuberculous infections of bovine origin.

I adopt a method similar to that of Mr. Torrance on visiting a farm, and I think the best position for examining an udder is to stand directly behind the cow, as one then gets a better chance of comparing the symmetry of both sides of the udder, which is a very important guide—indeed, sometimes the only one available.

In some of the areas supplying Manchester, however, the Movement of Animals (Records) Order, 1925, is not strictly enforced, and there is often great difficulty in ascertaining movements of stock in the period which necessarily elapses between the date of sampling and the examination of the herd. As a further precaution, bulk samples are always taken in the city from any supply which has recently been tuberculous, after allowing a reasonable time for dry cows to calve again.

I am very interested in the procedure adopted by Mr. Torrance in the laboratory. Unfortunately, at the moment, I do not do my own microscopics, and it is rarely that I receive a positive result microscopically. I think more attention should be given to the microscopic examination of individual samples on account of the time saved in getting positive animals slaughtered, to the benefit of the farmer and consumer alike.

The essayist says, "When the microscopic examination indicates that the sample is definitely negative." Is it possible, then, to be so certain of the absence of tubercle bacilli by the cell-group picture alone, even disregarding the clinical evidence which must have been present to cause the particular cow to be sampled separately in the first place? The addition of such a sample to one of the groups seems to me to be rather a peculiar procedure because, if that particular group sample is reported positive to the biological test, another sample would, of necessity, have to be taken from the animal previously suspected. I should certainly think it would be better to allow all the individual samples taken in the first place to be examined biologically, unless tubercle bacilli have been found microscopically.

Another interesting point is the large number—approximately 6 per cent.—of cases where Mr. Torrance has found acid-fast bacilli other than tubercle bacilli. I have yet to come across my first experience of this, and I should be very pleased if he would enlighten us as to the bacilli found, and if they were definitely bacilli, or just acid-fast particles which are commonly found.

I note that in 84 cases where a definite source of infection was traced, 88 cows were found with udder tuberculosis. My experience has been that more than one positive udder has been found on examination of an infected herd on a great number of occasions. This occurred so frequently last year that I was drawn to the conclusion that tuberculosis of the udder was increasing in this part of the country. In 13 cases two cows were slaughtered, in six cases three cows, in three cases four cows, and in one case six cows were slaughtered before the supply was clear. The largest of these herds numbered 50, but the average was only 25. The total figures for Manchester in 1931 were very high. Milk from 896 farms was examined, and no fewer than 145 of these gave a positive result—a percentage of 16·18.

Regarding diagnosis, I agree with Mr. Torrance that fore-quarters are much less frequently infected than the hind-quarters—particularly the right hind-quarter. A rough calculation of my results for the last four years shows that the right hind-quarter is the seat of infection as often as the other three quarters put together. Tuberculosis of the fore-quarter presents little difficulty

when there is hypertrophy, but in the atrophied cases diagnosis is not easy, being often difficult to differentiate from mastitis. The character of the secretion I find something of a guide, and the more it approximates to normal milk the more suspicious am I that the induration is tuberculous. Has Mr. Torrance seen tuberculosis of both hind-quarters without the fore-quarters being affected, or *vice versa*? These conditions seem to be so exceedingly rare that I think the value of lateral comparison of the udder is enhanced as a means of diagnosis, especially in differentiating induration due to mastitis, which nray affect each or all quarters indiscriminately.

Mixed infections in a quarter I have also found to be infrequent, as has Mr. Torrance, and they are usually difficult to detect. Only constant practice in the " feel " of the different types of induration can help the veterinary surgeon to pick out these cases. I put no faith whatever in the supramammary gland, either in these mixed infections or in tuberculosis alone. Following some observations of Mr. Torrance in the *Record* a short while ago on this point, I have paid even more particular attention to enlargement of this gland, but I am still unable to find it any help in diagnosis. In positive cases, where the gland showed enlargement, I have always found clinical evidence in the udder, but I have taken numerous samples from udders where the only suspicion was an enlargement of the supramammary gland, not associated with any history of mastitis, and I have not yet had one positive result. Conversely, I have dozens of tuberculous hind-quarters where it has been impossible to note any enlargement of the supramammary gland.

In the case of the drying-off cow, or the cow which has gone dry since the positive bulk sample was taken, the irregularity often shown in the udder is a source of complication, and undoubtedly Mr. Torrance's method of noting the date of the next calving so that a further examination can be made is the only sensible one. Unfortunately, in these cases, there is no means of preventing the owner from selling such a cow, and that is very often what does happen, because the owner has " smelt a rat."

Another condition which I have noticed particularly, on many occasions, is in the case of a cow which runs her milk away. Leaky quarters are almost always indurated, and the induration is frequently indistinguishable from tuberculosis. I have sampled many such animals, but have yet to find one positive, and I would like to hear if Mr. Torrance has had a similar experience.

Regarding the cases where no positive cow can be found, and there is no history of removals from the herd, I think all the reasons the essayist has given would possibly account for some of these, but the explanations I favour are:—firstly, cows removed from the herd and a false history given, either through forgetfulness or with intent to mislead; and secondly, tuberculous fæces. I had thirteen cases last year in which the source of infection remained undetermined. I have often thought that intermittent passage of bacilli in the milk was the explanation, but I have never been able to demonstrate this and, like Mr. Torrance, am far from being convinced on the point.

I have not come across a case of contamination of milk from a human source as yet, but from Mr. Torrance's remarks it is obvious that such a possibility must not be disregarded.

The experience in Nottinghamshire and the percentages quoted appear to show that the incidence of udder tuberculosis is similar in the Midlands to the North-West, and I should have liked to have heard the essayist's views on the desirability or otherwise of pasteurisation as a measure for protection of the consumer. Perhaps he purposely refrained from mentioning the subject in order to prevent the discussion ranging over the merits and demerits of pasteurisation which, of course, is outside the scope of the subject chosen.

I would again like to thank Mr. Torrance for coming before his old Division with such an excellent paper.

Major D. S. Rabagliati expressed his thanks to the Secretary for asking him to be present that day to hear Mr. Torrance's paper; it had been a great pleasure to him to listen to it. He should like to congratulate the essayist on the thoroughness with which he had dealt with the subject.

He agreed with the great majority of the points raised, and most of the difficulties he had explained to them. He also agreed with Mr. Locke in that he did not put much faith in the enlargement of the supramammary gland as an indication of tuberculosis of the udder. He had taken a large number of samples from animals where there had been enlargement of the supramammary gland, and in almost every case a negative result had been reported.

Mr. Torrance had given them figures of the work done in Nottinghamshire, and he was sure he had been most thorough and had conferred great benefit upon public health generally. Last year the County Medical Department took about 700 samples of West Riding milk, and only 19 were found to contain tubercle bacilli—that was hardly 3 per cent. He thought the general veterinary inspections that were being carried out were the explanation of that low figure, because, purely as a result of clinical examination of cows last year, 252 tuberculous udders which had not been reported by owners were found, and only 28 as a result of bulk sampling.

Regarding the delay in examining a herd as a result of the present milk legislation, referred to by Mr. Locke, if they got a complaint in West Riding they visited within 24 hours. They did not follow the procedure laid down in the Milk and Dairies (Consolidation) Act, as it was very slow and unsatisfactory, but they acted under the Tuberculosis Order and did not notify a farmer that they were visiting. They invariably communicated by telephone with the Local Authority who referred the matter to them so that their representative could be present if he wished.

He did not agree with Mr. Torrance with regard to the inclusion of the milk from a suspicious animal in a group sample. He thought that was a mistake, as one had to take another sample from that animal and all others of the group if a positive result was reported.

He had found a non-tuberculous acid-fast bacillus on several occasions. It was a short thick bacillus not at all like tubercle. He had a case, in which Mr. Tweed was concerned, bearing on that point. He had two group samples of six cows in each, whilst Mr. Tweed had one sample containing the milk of 12 cows. He found that one of his samples contained a number of acid-fast non-tuberculous organisms, and Mr. Tweed also found the same in his sample. The samples were negative to the biological test. In another instance a veterinary practitioner reported a Jersey cow as having tuberculosis of the udder. He had sent a sample to London and received a positive report. One of his (the speaker's) assistants inspected the cow and was not satisfied that it was a case of tuberculosis, although one quarter of the udder was enlarged. He took two samples, and they were found to contain acid-fast organisms but were negative to the biological test. The cow showed no other evidence and she was released from all restrictions. The owner, how-

ever, sent her to the knackers, and they were able to make a *post-mortem* examination. There were certain fibrous indurations in the udder, a portion of which was sent to the laboratory, but no definite signs of tuberculosis were found. Doubtful cases of that description required great care and should be confirmed by the biological test.

He had had cases where tuberculosis was found in both hind-quarters, but he could not say definitely that he had seen it only in both fore-quarters. Only that morning a farmer reported a heifer with an enlarged precrural lymphatic gland, and whilst he was at the farm he asked him to look at a cow which had calved six weeks ago. The right fore-quarter had a distinct nodular induration, not a general enlargement, and there was a tuberculous induration in the opposite hind-quarter. The milk was positive microscopically. They got a large number of cows which, after calving, suffered from an œdematous condition of the udder. It was called locally by various names, and in cases where one quarter remained like that and did not become normal again like the others, he frequently found that condition to turn out to be tuberculous.

Regarding the benefit of general routine inspections, he agreed that both methods were necessary. However careful one was as to clinical examination, one would not find every cow. In view of the figures he had already quoted for the West Riding, he thought clinical examination was better than bulk sampling when both methods could not be adopted.

Concerning the question of intermittent tuberculous milk, he thought it happened sometimes. In one case they examined all the cows at the farm and all the samples taken proved negative. A report was sent to the City that took the original sample, and they took another sample which again proved positive. The farm was revisited and one cow with an indurated quarter was found, which was not showing at the first visit. They found quite a number of dry cows with tuberculous udders.

Mr. H. T. Matthews observed that Mr. Torrance had given a record of a system in which bulk sampling as a means of the detection of the source of infection in tuberculous milk was dominating, and they had heard Major Rabagliati on the value of routine examination. He thought they might request Mr. Torrance and Major Rabagliati to collect and publish figures comparing the cost and efficiency of those two systems. He suggested that they should express the result as the cost per cow dealt with.

He wanted to support Major Rabagliati in his opinion that, whilst bulk sampling had its value, that of routine examination was greater, and he would like Mr. Torrance, in his reply, to discourse on that subject at some length. His standard of efficiency in sampling was greater than the usual standard adopted in cities or counties. If routine examination was carried out at three-monthly intervals, bulk sampling should also be done at the same intervals in order fairly to compare relative efficiency. He would like Mr. Torrance to tell them how he distinguished non-tuberculous acid-fast bacilli from tubercle bacilli. It was well known that diphtheroids, unless strongly decolourised, would retain the stain.

He was very interested in his statement that six negative slides showed typical cell groups, and he wanted to hear more on that point, because he found that cell groups were of remarkable accuracy in spotting tuberculous mastitis. Would Mr. Torrance explain to them how he arrived at the conclusion that the cell groups were typical?

Mr. Torrance was going to get into trouble with regard to the supramammary lymphatic gland. He had mentioned the rare case where the infection entered the udder by way of that gland, and differed from the writer of a classical article, who expressed the opinion that that was the usual mode of entry of tubercle bacilli, omitting to take into consideration that it was rather unusual to find definite lesions in the lymphatic gland even when the disease was well advanced in the mammary tissue.

He understood what Mr. Torrance meant by the clinical value of the enlargement of the supramammary gland, but he did not agree with him. He thought the gland was subject to the influence of too many other infections and conditions to be of great value. Nor did he agree that the gland reduced in size quickly after an attack of mastitis. The only certainty, when there was an enlargement, was that there was or had been an infection of some sort. In his view he over-emphasised the clinical value.

He wanted to support Mr. Torrance in his policy of examining milk microscopically and including in the mixed sample a sample from a suspicious animal which was apparently negative to the microscope. During the last few months he had made a practice of examining control samples of milk microscopically. The incidence of typical cell grouping in milk and its value in the diagnosis of tuberculosis was such that he thought the system could be applied more widely than to samples from single animals. He had some results that would probably please Mr. Torrance and encourage him if he could find the time to employ the same method. They would appreciate that a control sample was from a number of cows in which one was unable to find a definite culprit, so that in examining such milk one was really looking for something which one did not expect to be present; but cell groups occurred so very early in a tuberculous infection of the udder, that he thought the method would be worth while eventually. The object was simply to look for cell-grouping, using the low-power lens. He had recently examined 25 control samples in that way involving groups of from two to 18 cows. Nineteen of them were negative microscopically, in agreement with the biological test, and four were found positive microscopically. In two cases his conclusions were erroneous. The four positive results came from 6, 10, 18 and 3 cows respectively. When he got a positive result such as that, he split the group again, and so far had been able to track down the cow, in a pre-clinical stage. Whether the principle could be extended to bulk samples was another question. He had tried it, but had not had good results. The trouble was that in a sample from a dairy one did not get the sediment from the bottom of the can. The evidence so far was not sufficient on which to base conclusions, but if one could succeed, using only 10 c.c., it was hopeful.

He congratulated Mr. Torrance on his paper. They should recognise the value of the work he was doing and realise that eventually it was going to be of great value to them as a profession.

Mr. J. O. Powley stated that they had been told several times that tuberculosis as a subject matter for discussion was becoming rather a habit, but when they looked at the time and money spent on tuberculosis, he thought the subject was still ripe for discussion. In his view it was due to the public that the profession should give some account of its stewardship, and he thought they were receiving some small account of that stewardship that day. So far as he knew, no Local Authority had ever undertaken such an

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extensive system of herd sampling as that carried out by Mr. Torrance. After hearing Mr. Torrance one was able to obtain a truer conception of the value of sampling as against clinical examination, but those two methods must be combined.

Mr. Torrance also showed the necessity for the veterinary surgeon capable of using the microscope being in charge of proceedings. The clinical hints thrown out by Mr. Torrance were such that he was satisfied that everyone present that afternoon had learnt something.

He did not intend to offer any criticism of the paper, but he would like to ask, in connection with the non-tuberculous acid-fast bacilli found, whether there was any clinical evidence in the udder, and if so, whether that might be due to those bacilli.

Mr. Locke had mentioned that records under the Movement of Animals (Record) Order were not properly kept in certain districts, and he (Mr. Powley) thought if he dropped a hint to the proper authorities the matter would be looked into.

He suggested that Mr. Torrance be asked to give another paper to the "Lancashire" on that subject at some future date.

Professor S. H. Gaiger said that what he appreciated most about Mr. Torrance's paper was that it was a record of work done, not something taken from text books or a review of work done by others.

With regard to the eleven positive biological tests following which tuberculous cows could not be found, he thought they must look for an explanation of some of them in fæcal contamination, or perhaps the cows had been removed from the herd surreptitiously. Previous speakers had been lenient in references to the biological test, but he thought they should bear in mind that there was a possibility of the biological test failing, in a small percentage of cases, to result in infection of the guinea-pigs. They had found in Liverpool that in 10 per cent. of positive milk samples one of the pair of guinea-pigs remained healthy, and it seemed to him that there might be a possibility that the tuberculous milk of both guinea-pigs might fail to become infected.

He was interested in the different methods employed in bulk sampling, and thought Mr. Torrance's method was best, because he ensured that his herd samples contained some of the milk from every cow. A churn sample did not give any assurance on that point.

The question of cost was another matter for discussion. Money might be expended largely on the salaries of veterinary inspectors, or on a large amount on biological testing. The biological test was of immense value, but it should be followed up by thorough veterinary inspection if they wished to be logical. In his view Mr. Torrance's methods approached the ideal.

He did not agree with Mr. Matthews that more value was to be placed on microscopic examination than on the biological test. The latter must detect cases that would be missed by clinical examination, but from what they had heard that day they must agree that veterinary inspection did an enormous amount of good. One felt almost envious of those who were doing that work, because of the sense of satisfaction to be derived from the detection of so many tuberculous udders and doing so much for the public health.

Regarding the intermittent passing of tubercle bacilli in the milk, he thought that was a difficult thing upon which to come to any conclusion, as there were so many other factors which might affect the milk being positive at one time and negative at another.

The paper stressed the importance of proper sampling. Samples should be collected in an aseptic and sterile fashion, whether for microscopic or biological examination, otherwise one could not be certain of one's results.

He wished to thank Mr. Torrance for bringing forward that important subject: they might well have discussions at future meetings on the many points which he had raised.

Mr. W. Tweed said that he only wished he had had a copy of Mr. Torrance's paper before the meeting, in order to read carefully the points he had made. He saw that he was still a strong believer in the assistance given by the enlargement of the supramammary lymphatic glands. Personally, he considered the examination of those glands of very limited value. Major Rabagliati mentioned an experience they had together in the examination of a herd, where both found acid-fast bacilli which were not tubercle bacilli in the control sample from a herd, and they traced those definitely to one cow which had a very slight induration in one hind-quarter. Mr. Torrance had mentioned cell clusters being present in some milk samples which were negative, and he should like to point out that a newly-calved cow with slight inflammation of the udder secreted those cell clusters which were apt to mislead one: he had sent several such samples for the biological test with negative results. Nevertheless, cell clusters were the best guide in tuberculous milk and were of great value in microscopical examination.

In that connection there was a point raised about being able to differentiate clinically in indurated udders, so that one could omit to examine the milk from a cow suffering from an induration which was not a tuberculous induration. He must confess that he liked to take that step after the microscopic examination, and there was no question in his mind about the value of that precaution, otherwise some tuberculous indurations would be missed. There were cases from which one could confidently omit taking a sample on account of the history and physical signs in the udder, but there was danger in drawing the line clinically.

Mr. Torrance had carefully omitted to express any opinion in his paper on the value of routine clinical examination *versus* mixed milk from herds examined biologically and tracing the tuberculous samples by clinical examination of the udders in those latter herds. He must say that in Sheffield it had always been the practice to carry out routine inspection without milk sampling in the first instance, until that year. He made an examination of the mixed milk of cows biologically after clinical examination and discovered that clinical examination was not a means whereby all infection in milk, especially early cases of the disease, could be traced without a biological examination of the mixed milks from the herds, and he was considering whether it would not be more profitable to take milk samples from the herds in the first instance and concentrate on the udders of the cows in the herds where there was infection of the milk in order to trace the source of infection. The examination of the herds which gave a negative milk result could be made for clinical cases of tuberculosis later, when convenient to do so.

So far as the comparative cost of those two methods was concerned, he had worked out on the basis of cost per tuberculous udder and found it to be about the same.

The tracing of positive mixed herd samples would, he thought, be the means of discovering more udder infection and be of more public health value, yet that method without routine in-

spection was of very limited value in the prevention of infection in the herds, as the cases of open lung disease were not satisfactorily removed, and he was glad to hear Professor Gaiger and Major Rabagliati say that a combination of those two methods might be tried to ascertain whether better results would be obtained for the money expended.

In regard to the taking of those mixed samples, much confusion of owners' names and mixing of samples was eliminated by taking the samples at the farms, and in Sheffield the sampler followed the lorry collecting at the farms in the country districts or as it left the premises in the city.

Did Mr. Torrance consider 28 days to be a sufficient length of time to allow the guinea-pigs to live after inoculation with the milk before slaughter was carried out? What percentage of positive milks might be missed in that period?

Further, in regard to pasteurisation of milk. While he considered the wholesale pasteurisation of milk supplies to be unjustified, did Mr. Torrance think it would be practicable or advisable to recommend pasteurisation of a certain milk supply found positive until such time as the veterinary officer certified that the infection in that particular herd had been removed?

Mr. T. Wilson observed that he would like to ask a question on a matter which was not actually contained in the subject of Mr. Torrance's paper. If one took a sample of milk and six weeks elapsed before a result to the biological test was known, was the owner entitled to compensation for the loss of that cow's milk during that period?

On the question of not finding a cow causing the infection in the milk, in most cases, if one could take the owner of the stock into one's confidence, he often had a good idea which animal was causing the trouble. He (the speaker) once asked a farmer if he knew the animal which was causing the infection, and he pointed out a cow which appeared to be sound, but said that at times the udder swelled and then went down again. He took a sample, but could find nothing microscopically. The biological result was positive.

He agreed with Mr. Locke and Major Rabagliati in their remarks about the supramammary gland. He had taken samples from cows with supramammary gland enlargement and they had usually been returned negative.

There was one type of tuberculosis of the udder which was rather misleading. One got œdema of a quarter and some heat and pain—contrary to the typical clinical picture, and in one such case he obtained one of the best samples of tuberculous milk he had ever seen. Other speakers had mentioned that one got cases of tuberculosis with atrophy of the quarter.. In his opinion, where there was atrophy it was due to something other than tuberculosis.

He would like to ask, also, if one could get acid-fast bacilli in the milk without clinical symptoms in the udder. If the udder was indurated and there were acid-fast bacilli in the milk, was not one always safe in diagnosing the condition as tuberculosis?

Mr. W. Woods commented that he was not an expert and therefore had not much to add to the discussion. The same difficulties seemed to be experienced to-day as years ago. It was unsatisfactory to receive a notice that tuberculosis had been found in a milk sample and to be unable to find the cow causing the infection. One took group samples, all of which proved negative. That used to worry him, but he had now given up worrying because there must be no tuberculosis in the cows worth worrying about.

Regarding the taking of bulk samples, that was often absurd. For instance, five churns of milk might be sent from a farm and a sample taken from only one of them, which might contain only the milk from four or five of the cattle.

Mr. R. Hughes expressed the view that the services of the veterinary profession were not appreciated at their true worth. On account of his training and study, the veterinary officer was the best man for that work, and veterinary inspection did a lot of good in educating the farmer.

He was often called upon by the County Medical Officer of Health to visit farms supplying tuberculous milk, and he was of opinion that samples should be most carefully collected, as carelessness in milking might have something to do with the trouble. One got dirt in the milk, and there was a possibility of contamination from infected fæces, dessicated into dust.

From the producer's point of view, he would like to ask Mr. Torrance if he found more positive samples from milk where the butter fat was less than normal? Did he regard the morning or evening milk as the better for testing purposes, where there was a difference in butter fat content?

Mr. E. H. Curbishley had two points in mind—the first with regard to the Movements of Animals (Record) Order. This was not carried out in Cheshire, and he thought an example should be made of one or two farmers who did not keep records. This would prove very salutary.

Secondly, the threat on the part of the Manchester Corporation to institute compulsory pasteurisation of all milk supplies. That had some effect locally, and he thought the subject should be brought into the discussion. Some small stock owners were against it, but what its effect would be, he did not know. It also raised the question as to whether or not it would tend to eliminate the tracing of tuberculous milk.

Mr. J. Holroyd asked Mr. Torrance how many control samples proved positive to the biological test.

THE REPLY

Mr. Torrance, in reply, said:—

I have a great many questions to answer and I shall endeavour to reply to them as briefly and satisfactorily as I can.

Mr. Locke mentioned the revocation of the Milk Clauses and the delay in examining herds giving tuberculous milk under the Milk and Dairies (Consolidation) Act of 1915. Major Rabagliati in his remarks dealt with this matter and has answered the question for me. Mr. Locke raised the question of the difficulty of ascertaining the movements of dairy cattle. I quite agree that it is a difficulty which is much more pronounced in certain districts where there is a lack of supervision of the stockowners' "Records Books." In Notts the Police frequently examine the Records Books and in consequence they are well kept and have often been a great help to me in tracing stock.

The question of why I add a microscopical negative milk to the control or one of the group samples was raised by many of the speakers. It is really purely a matter of economy. For instance, if one examines a herd of, say, 20 cows and one takes two individual samples from cows with suspicious udders and two group samples of nine cows in each group, and one of the individual samples is positive microscopically and the other negative, in order to ensure that no possible source of infection is missed it is more economical to add the negative one to one of the group samples and so save the price of the biological examination. Also, having found the tuberculous udder, the group samples can be mixed and sent for biological examination as one sample; in this way a further economy can be

practised. Where many herds supplying tuberculous milk are examined, this procedure results in a very considerable economy.

Regarding the question of non-tuberculous acid-fast bacilli, raised by several speakers, they are quite definitely bacilli, being very short, varying in length, thick in comparison with their length and red throughout.

I notice that most of the speakers have no faith in the supramammary lymphatic gland as an aid to the diagnosis of the tuberculous mastitis. Well, that is your view, and I disagree. I do claim that it is a distinct help and I am glad to say that I have met quite a number of veterinary surgeons who hold the same opinion. You cannot get tuberculosis of an organ, except in the earliest stages, without enlargement of the associated lymphatic gland, so that if a hind-quarter is tuberculous, the supramammary lymphatic gland is enlarged. Now the question is, can it be palpated?—and in this connection I would like to point out that it is not necessary to be able to feel the whole gland to get an indication of its size. If the lower border alone can be felt, its thickness is an indication of the size of the gland and it can be compared with its neighbour. I readily admit the difficulty, almost the impossibility, of detecting it in a well-nourished heifer or a fat animal. But the great majority of cases of udder tuberculosis occur in cows that have had three or more calves, and are in "store" condition, by which time the udder has become more pendulous, and the suprammary lymphatic gland more accessible. If the hind-quarter is indurated, the milk normal in appearance and the supramammary lymphatic gland enlarged, then one is dealing with a very suspicious udder.

Major Rabagliati tells us that about 3 per cent. of the samples taken in the West Riding were tuberculous. I have no doubt this low figure is due to the efficient inspection which exists there.

Mr. Matthews said that it would be very interesting to have a comparison of the results and the cost of routine veterinary inspection compared with the bulk sampling of milk. This same thought has often occurred to me, but there are a great many difficulties in the way, which become more prominent the more carefully one examines the question. I have often thought of consulting Major Rabagliati on this subject with a view to ascertaining the relative value of the two systems, and I promise you that I shall further consider the matter. Mr. Matthews mentioned about the six negative microscopical samples which showed typical cell groups. Well, I must claim to be not unfamiliar with cell groups, but one must avoid prejudice and my way of deciding whether a cell group is typical or atypical is to say to myself, "If I found tubercle bacilli on this slide would I deal with this cow under the Tuberculosis Order of 1925?" and if the answer is in the affirmative, then I record the slide as showing typical cell groups. On this method, six of the negative slides showed typical cell groups, but in two instances only one cell group was found on the slide.

I am deeply interested in what Mr. Matthews said about utilising cell groups in group samples, to subdivide the groups with a view to detecting a cow passing tubercle bacilli in her milk in the pre-clinical stage of udder tuberculosis. I shall certainly test his method as I am a firm believer in cell groups as a rapid means of detecting tubercle bacilli. In a city, however, it would be of greater service than in a county, because the area is smaller and in consequence the cowsheds are more accessible, and in any method the question of cost must be considered. The method is new and I shall watch its development with great interest,

With reference to infection of the udder by way of the supramammary lymphatic gland, we sometimes see very clear cases of this, especially in meat inspection work, where one occasionally finds tuberculosis of the lymphatic gland with no naked-eye lesions in the udder.

Mr. Powley stressed the importance of checking the clinical examination of the cows by a biological examination of the mixed milk of the herds examined. The subject is so big and so important that I cannot enter into a discussion about it here, but I am in general agreement with what Mr. Powley has said. Mr. Powley's question as to whether the acid-fast bacilli in the milk were associated with a clinical condition in the udder, is one of great interest. Personally I do not know whether they are pathogenic or not, but they were all found in milk which I obtained from cows with abnormal udders. I must leave it at that meantime.

I am deeply interested in Professor Gaiger's remarks, especially his reference to the 10 per cent. positive cases where one guinea-pig remained healthy. I trust that in due course he will give us the benefit of his wide experience of animal inoculation for the detection of tuberculosis.

The answer to Mr. Wilson's question is that the owner is not entitled to any compensation for the milk of any suspected cow under the Tuberculosis Order of 1925, whether or not it is eventually dealt with under that Order.

Œdema of the whole udder occurs very commonly after calving and, if one quarter is tuberculous, the œdema will take longer to clear away from that quarter.

I have already answered some of the points raised by Mr. Tweed, and the question about the length of time the guinea-pigs should be allowed to live, in carrying out the biological test, is a matter for the bacteriologist, and raises the question of establishing a standard for the test.

I regret I am unable to answer Mr. Holroyd's question without reference to my records.

I think I have covered most of the points raised, but if I have missed any, I shall be only too pleased to answer them.

STIMULATING GOOD HORSE-KEEPING

"The fine condition of the horses and harness used by the Oxford Corporation and the enthusiasm of their grooms and drivers was commented on last night when Ald. J. Ray presented the Corporation Cup for the best kept horse at the Isis yard," says the *Oxford Times* of July 8th. Ald. Ray was supported by Ald. Brown and Ald. Barratt, and Major F. J. Taylor, Veterinary Surgeon and Veterinary Inspector to the County of Oxford, who gave the cup, was also present.

Ald J. Ray, presenting the cup, said that he wished to thank the men for the work they had given the judges in selecting the winner. Six competitors had all been very close together, and though they had eventually narrowed the selection down to three, they had had some difficulty in deciding upon the holder of the cup from those. The cup and first cash prize this year went to Mr. G. Green, Mr. W. Robins, the winner last year, being second, and Mr. H. Howes third.

"Major Taylor said that his object in giving the cup was to stimulate a feeling of interest and kindly regard among the drivers of Corporation carts for their animals. That this object had been achieved was shown by the present splendid condition of the horses, which were a credit to any municipal body. They had a great deal to thank the Stables Sub-Committee for in their efforts on behalf of the department."

The Veterinary Record

July 30th, 1932.

THE DETECTION OF THE SOURCE OF INFECTION IN TUBERCULOUS MILK

IT has of late often been said that discussion on bovine tuberculosis and tuberculous milk has become hackneyed and nothing new can be said or written about it. We would recommend those who hold these views to read the paper recently given by Mr. H. L. Torrance at Manchester and the discussion it invoked, which we publish in this issue, and also that presented by Mr. H. T. Matthews at Tamworth, which appeared in our number of July 18th. We venture to think that if these are carefully studied it will be seen that the last word on tuberculosis and its infection in milk has by no means been spoken.

Mr. Torrance has given us a very careful record of his work in Nottinghamshire for the year 1931 and in many ways it is an innovation compared to the methods practised in other countries. He found himself in the position of being responsible for safeguarding the county milk supply from tuberculosis and in circumstances which, presumably, did not permit of engaging a staff to carry out the inspection of the cows. He, therefore, hit on the method of arranging for the systematic collection of mixed samples of milk to be taken from all cows actually in milk on the farms visited. These may truly be called " herd samples " and being really representative of the herd, differ from the usual " bulk samples " commonly collected by sanitary authorities and taken more or less at random from one or more churns and which do not necessarily represent the complete milk of the farm. These samples are submitted to the biological test and inspection of the cows on the farms from which positive samples are obtained is carried out in an endeavour to locate the offending cow or cows if at all possible. Out of 1,288 samples thus dealt with no less than 8·84 per cent. showed the presence of tuberculosis. In tracing the origin of the infection in the 108 positive samples a definite source was found in 84 or 77·7 per cent. of the cases investigated. This resulted in 88 cows being detected with udder tuberculosis, eight with clinical pulmonary tuberculosis, and two suffering from tuberculous emaciation.

Mr. Torrance gives a full account of the methods he adopted to trace these cows and also he is not ashamed to admit his failures and to discuss what circumstances were responsible for those cases where no tuberculous infection could be traced. He even suggests that such failures—only too well known to others endeavouring to elucidate similar problems—may in some cases be due to a human infection derived from those handling the milk. This is a possibility of which sight should not be lost, although no doubt further investigation is required to verify it.

The discussion showed the keen interest that those present, and we venture to say the profession generally, take in this subject and opened up the question as to whether the method now adopted in Nottinghamshire is as good as, or even more efficient than, those carried out elsewhere.

The methods usually adopted in England to prevent the sale of tuberculous milk, apart from pasteurisation, are, roughly speaking, two. The first consists of taking random samples during transit or from retailers' or wholesalers' premises, submitting them to the biological test and following up those in which tubercle bacilli are found. The removal of actively tuberculous cows from milking herds, other than the comparative few found as the result of such bulk sampling, is left to the reports of farmers, which, experience shows, means that but few are reported and these not till they have done most of the damage that they are likely to do.

The second method, universal in Scotland, and carried out in many of the English boroughs, but in only a very few of the English counties, consists in the regular routine inspection of all milking cows. This method, when carried out at frequent intervals by a specially trained staff of veterinarians, has proved its worth, not only from the large number of cows detected with tuberculosis of the udder, frequently in the early stages, but also by the number of pulmonary cases it enables to be removed from the herds, often before the udders and so the milk, are involved. Such cases can rarely be detected by bulk sampling of milk, however carefully carried out.

The resulting benefit of any method largely depends upon the zeal and thoroughness with which it is done, but of the two mentioned, many will deem that of clinical inspection to be the superior. A judicial combination of both is without doubt, however, the best of all. When more experience is gained in Nottinghamshire, and possibly other counties follow its lead,

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it will then be easier to compare the efficiency of this method with others.

Although the deciding factor must be the value to the health of the community, the question of cost, especially in these days of economy, must largely enter in. The county veterinary officer who is unable to arrange for a satisfactory clinical examination of the cows in his area would, we think, be well advised to follow a system similar to that now adopted in Nottinghamshire.

Mr. Torrance's paper adds further to the evidence already brought forward of the great benefit to the milk consuming public of the veterinary profession being actively utilised in connection with the production of milk. The onlooker, indeed, must often pause to wonder why local authorities do not more often employ the skilled service which the profession can provide.

ROYAL COLLEGE OF VETERINARY SURGEONS

Membership Examination, July, 1932

LIST OF SUCCESSFUL CANDIDATES

(*Continued from page* 851.)

GLASGOW:

Class A.

†Aitken, R. N. C.
†Barr, T. F. F.
†Bolton, James.
†Brooksby, J. B.
†Cochrane, D. M.
Cockrill, W. R.
Frew, O. M. L.
Fyfe, A. M.
Geddes, James.
Gray, W. M.
Hector, Alex.
†Hill, F. J.
†Howie, David.
Jackson, T. A.
Kerr, J. R.
Logan, J. L.
McGrath, R. E.
McIndoe, John.
†Mackinnon, John.
†Moodie, David.
†Murdoch, J. J.
O'Hagan, E.
Paterson, J. D.
Rennix, S. J.
Scott, D. C.
†Service, Q. M.
†Shand, Alex.
Sillars, R.
Stewart, J. H.
Turkington, H.
Williams, F. T.
Wilson, William.
Wyper, D. W.

Class B.

Donaldson, G. S.
Duff, Miss M. G.
Fleming, T. B.
Greig, Henry.
Lawson, J. R.
Livingstone, James
Macfarlane, M. R.
†Muir, A. H.
*Murray, J. G.
†McIntyre, D. M.
†McLintock, John.
†Ross, W. D.
Sweeney, Charles.
Thomson, J. K.
Young, G. D.

Class C.

Gowans, W. A.
Macauley, J. W.
Mitchell, Miss H. J.

* Denotes 1st class honours.
† Denotes 2nd class honours.

Class D.

Baird, Manson.
Chesters, R. W.
Jamieson, Samuel.
Mackenzie, Colin.
Mackinnon, John.

DUBLIN:

Class A.

Byrne, M. J.
Dodd, D. O.
Joyce, William.
McIlhargey, L.
†O'Hagen, J. J.
Purcell, P.
Quigley, Hugh.
Spears, H. N.
Stewart, D. M.
Sweetman, L.

Class B.

Colleran, J. A.
Crawford, G. J.
Herlihy, M.
Magnier, C. E.
O'Connor, D.
O'Neill, D. N.
†Sheehy, J. R.
Taylor, Miss D.
Walsh, W.

Class C.

Byrne, M. T. G.
Peatt, C. M.
Pilkington, C. J.
Sweeney, J. S.

Class D.

Begley, P. T.
*Pierse, R. R.

* Denotes 1st class honours.
† Denotes 2nd class honours.

HUMAN DISEASE IN ANIMALS

At the summer meeting of the University of London Medical Graduates' Society, which was held on July 14th, in the Zoological Society's Gardens, Colonel A. E. Hamerton, M.R.C.S., pathologist to the Society, gave an interesting demonstration of human diseases occurring in animals. He said that the pathological department of the Zoo performed and recorded over a thousand *post-mortem* examinations a year. Many of these revealed conditions with which the human pathologist was familiar, but on the other hand certain animal groups showed immunity from many of the commoner human diseases. Thus, most of the lower mammals, including the monkeys, were immune from the common cold, to which the anthropoids fell easy victims—an interesting collateral proof of their human affinities. Again, *post-mortem* appearances suggestive of one infection might be found in animals to be due to a different organism, as when repeated cases of dysentry failed to furnish a single Shiga's bacillus, although Morgan I, Erdlicher, and paratyphoid could be identified. Some diseases, on the other hand, appeared to be of almost universal occurrence. Of these, the most striking example was tuberculosis, which infected all animals (with the possible exception of donkeys and mules), although in different strains. It was noteworthy in this connection that the incidence of tuberculosis among the monkeys at the Zoo has been extraordinarily reduced since the introduction of sterilised tinned milk in place of fresh milk. Among other important and interesting problems discussed arose the question of rickets in burrowing and nocturnal animals. It was noteworthy that hedgehogs in captivity invariably developed the disease, while it was unknown among wild hedgehogs, though neither were exposed to sunlight and their food was apparently identical. Cod-liver oil completely failed to cure the condition in these animals.

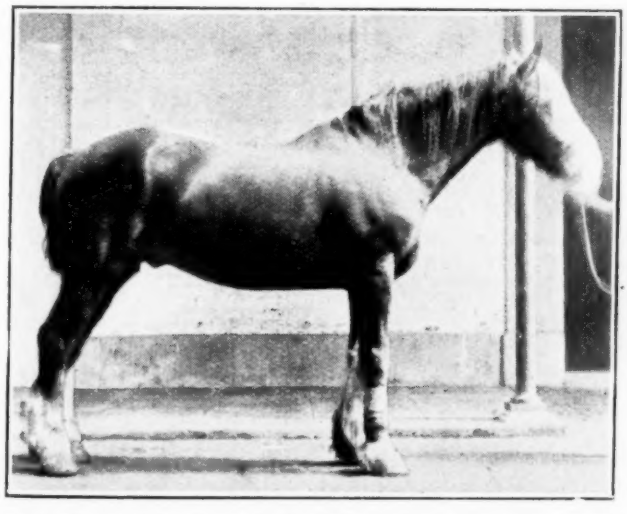
Clinical Communications

DUPUYTREN'S CONTRACTION

J. SHARE-JONES, D.V.Sc., M.Sc., F.R.C.V.S.

In the *Veterinary Record* of May 28th, General Sir John Moore very kindly draws attention to the surgical cases appearing under my name in the preceding number. He quotes the paragraph in which I state that "I have similarly practised dissection of old-standing cases of sprained tendons with extensive adhesions," and points out a possible analogy between this and the method of treating Dupuytren's contraction in the human subject. His account of this latter is, of course, unimpeachable and for obvious reasons very interesting.

I am in complete agreement with him that there may be an analogy between the contraction of the fascia in the hand and certain conditions in the horse. But my view is that the analogy lies with those cases of contracted tendons with adhesions that lead to pronounced knuckling at the fetlock. In this connection I recall a recent case. It was a chestnut vanner gelding with knuckling so pronounced as to render him unworkable. He had been subjected to various forms of treatment without success. Apart from the great deformity, he seemed to be in pain. Median neurectomy was therefore performed and the two flexor tendons and the suspensory ligament dissected free. Two rolls of lint were placed on either edge of the tendons and the limbs bandaged. The case did well and improved to such an extent that he is now at work on a farm.



The open horse market is gradually finding its substitute in the auction sale ring. At St. Sair's Fair, Aberdeenshire, about 100 horses were stanced as compared with 200 last year and 350 in 1930.

UNUSUAL BILATERAL SHOULDER TUMOURS

J. SHARE-JONES, D.V.Sc., M.Sc., F.R.C.V.S.

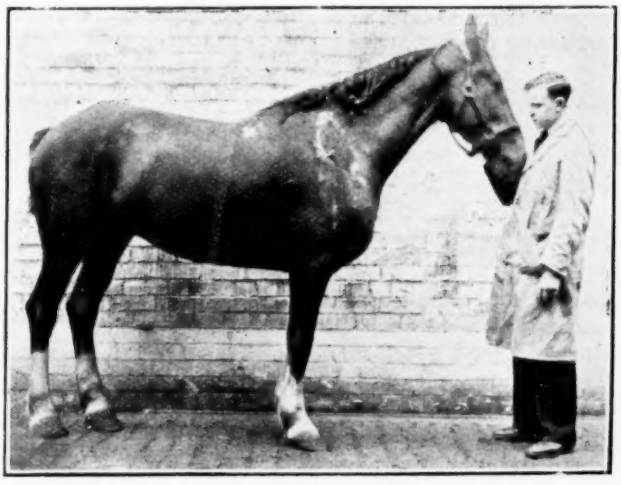
The subject was a dark chestnut gelding—a vanner—about nine years of age. He was of a fiery temperament and had been an excellent worker.

Two elongated tumours had developed slowly, one on each shoulder running obliquely downwards and forwards in line with the collar. Each tumour was about the size of an average cucumber and of a similar shape. The animal was placed under a course of potassium iodide for ten days and this effected a diminution in the size of the growths and caused their outlines to be much better defined. When there appeared to be no further diminution in size I decided to operate.

The operation was performed with the animal in the recumbent position on the bed and under a general anæsthetic. A curved incision was made along the posterior border of each swelling, the concavity of the curve being directed forwards. This incision was fourteen inches long on the right side; on the left side it was two inches shorter. Dissection was carried out from behind forwards. It was difficult, for the growth itself proved to be of almost stony hardness, and a knife very quickly lost its edge during dissection, while hæmorrhage from vessels at the periphery of the growth was most profuse.

Having completed the dissections and removed the tumours the flaps of skin were allowed to fall back into position and fixed by insertion of numerous closely set interrupted sutures.

The above technique for operation was adopted with the object of fixing the flap in position afterwards in such a manner that subsequent pressure of a collar would not tend to re-open the wound but rather contribute towards consolidation of the union, although dissection was somewhat more tedious than it



would have been had an incision been made along the middle line of the tumour and dissection carried out forwards and backwards from this. The result desired was achieved and the shoulder has carried a collar quite comfortably since.

Although several sections were taken and examined it was not possible to establish the histological nature of the growths. They have interested a well-known expert on cancer, who offered no opinion on them.

The animal is now working regularly and has been working for some months. But he will be kept under observation, and should anything occur in justification a further note will be published. What we shall note particularly will be any evidence of malignancy.

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SOUTH AFRICAN HORSE SICKNESS

T. A. B. COCKSEDGE, M.R.C.V.S.
C.V.O., Veterinary Department, Burao, British Somaliland

During this spring this country has been subjected to a very serious outbreak of this disease, some of the native owners of ponies having lost 100 per cent. of their animals.

One or two isolated cases occurred amongst the Government animals, necessitating precautions being taken.

The position was somewhat alarming, and as I personally had very little experience of this disease I was somewhat at a loss as to any treatment. I remembered vaguely Mr. Poulton, Chief Veterinary Officer, Uganda, having made some remarks on one occasion as to Sir J. M'Fadyean having suggested cold-water packs being applied over the chest till the temperature dropped—I may be dreaming this, but at all events it ran through my brain.

I considered the matter and concluded I would combine this treatment with medicinal febrifuges, using two drams of spt. ammon. aromat., liq. ammon. acet., spt. ether nit. in one pint water, given by the stomach tube (I never give internal medicine by any other method now) —any animal showing symptoms with a temperature of 102° F. or over being treated. The drench was repeated every six hours till temperature dropped to under 100° F., when medicine and cold-water packs were stopped and the animal massaged, walked about and protected from chill.

The results in many ways were very satisfactory and several animals were undoubtedly saved, two in which relapses occurred and the treatment was repeated.

In two cases the animals' temperature dropped and they were apparently progressing favourably, when in one case twenty-four hours later the animal suddenly dropped dead and in the second case forty-eight hours or so later.

Unfortunately in neither of these cases was it possible for me to make a *post-mortem*, but microscopical examination of blood-smears was made and bacteriological cultures from swabs, but the results were negative. From the history I could get the probability was that they were both of the cardiac type and that effusion into the pericardial sac caused death.

It was suggested to me by a medical friend that hot packs in place of cold packs would be preferable, considering the febrifuges I was using. There appears something in the idea and possibly I may try it, or on the temperature dropping apply hot packs in preference to the massage and gentle exercise.

I give this short account of a few cases treated for what it may be worth, as any information with regard to this disease I take to be of value, at all events to those keeping horses in Africa, as the literature on the subject of treatment does not, up-to-date, help much.

As far as I can gather this is the first serious outbreak of this disease since 1916, when the "Mad Mullah" lost about 1,000 ponies. A few isolated cases only have occurred during the last eight years.

VETERINARY INSPECTION IN THE STEWARTRY

At a meeting of the Stewartry County Council at Kirkcudbright on July 12th, the Public Health and Assistance Committee reported that they had had under consideration a report by the County Medical Officer regarding veterinary inspection in the county. He had conferred with the three veterinary surgeons resident in the county regarding the proposed co-operation in the work of the inspection of dairy herds, and they had signified their willingness to co-operate at a suggested remuneration of £200 each per annum, inclusive of travelling expenses. Such an arrangement would enable the dairy herds to be periodically inspected during the year.

A report was also submitted by a sub-committee, to the parent Committee, who stated that, while agreeing that such an arrangement might be desirable from the point of view of increased efficiency, they considered the present time inopportune for increased county expenditure, particularly so in view of the request of the Government, through the Scottish Office, that Local Authorities should not only exercise the utmost economy, but by a revision of their present commitments, should reduce them if possible.

The recommendation of the Committee was agreed to.

* * * * *

SHEEP DISEASE RESEARCH

At a recently-held private meeting of the Duke of Northumberland Memorial Fund Committee it was decided to proceed with the scheme for providing improved facilities for research into sheep and lamb diseases in Northumberland.

It was also decided to appoint a management committee.

Earl Grey of Howick presided at the meeting, and in a statement made to the Press at the close of the meeting, Mr. C. H. Carter, Clerk of Northumberland County Council, who is secretary of the Fund, said that the amount of the Fund at present was roughly £2,900.

Report

The Biological Examination of Milk

A Lincolnshire U.D.C. Enquiry

It is but infrequently that we have the opportunity of reviewing reports of the public health work carried on by the smaller Local Authority units, but particular interest attaches to that for the year 1931 presented by Dr. J. H. Clarke, of the Scunthorpe and Frodingham Urban District Council, in his capacity of Medical Officer of Health, in that during the year circumstances led to the prosecution of what is termed in the report a special enquiry into the value of the biological examination of milk. In passing, it may be remarked that from the number of special enquiries undertaken by this Public Health Department, at the instance of Dr. Clarke, it is evident that the local community can boast a remarkably active and progressive public health service. One of these, for instance, related to the supply of milk to elementary schools, with the object of ascertaining the benefits of the practice (instituted for some considerable time) of supplying sealed bottles containing one-third pint of pasteurised milk to the elementary schools, at a cost of 1d. each. Accordingly, a regular supply of milk was distributed free to three groups of children termed "Control," "One Daily" and "Two Daily," according as to whether they had no milk, or were given one-third of a pint or two-thirds daily, respectively. The tabulated results showed that in the milk groups the gains in height and weight were above the average for children of their age, and the practice of supplying milk was thus abundantly justified.

The particular section of the report which attracted our attention, however, is that in which the biological examination of milk is dealt with. In addition to the routine clinical examination of milch cows, special examinations were made in consequence of the results of biological tests for the presence of tubercle bacilli in a considerable number of milk samples. One sample of Grade A milk and three samples of raw milk were found to show definite evidence of tuberculosis. Subsequent inspection, by the Veterinary Officer of the County Council, of all cows at those farms (all of which were outside the Urban Area) supplying retailers whose milk had been found to be affected, yielded the following results. In the case of the sample of Grade A milk, two cows were found to be suffering from a tuberculous affection of the udder. These animals were slaughtered and diagnosis confirmed at *post-mortem*. In the other three cases the Veterinary Officer failed to detect any clinical evidence of tuberculosis in the suspected herds, nor were tubercle bacilli found in the milk. Biological examination of milk samples at another laboratory yielded negative results, and in view of the discrepancies which occurred in this series of investigations, the matter was taken up with the authorities concerned.

The report proceeds succinctly to sum up the situation thus:—

"It was considered that one or other of the under-noted explanations might account for the results obtained:—

"1. The producer, having ascertained that a sample of milk has been taken, and knowing that he has a tuberculous cow, forthwith gets rid of the animal.

"2. (*a*) Cows may excrete tubercle bacilli erratically—one day present in the milk and the next day absent.

(*b*) In some cases there may be no obvious lesion (disease) in the udder.

"3. Tubercle bacilli may be obtained from extraneous sources, *e.g.*:—

(*a*) A dipper may have been taken from an infected sample and placed in the one to be examined.

(*b*) The churn or other container may not have been sufficiently sterilised after containing a tubercle-infected milk.

(*c*) In milking, tubercle bacilli may have gained access from the cows' fæces, urine or sputum.

(*d*) Milk may have been sporadically infected from a human source.

"4. Factors affecting the laboratory:—

Given that the laboratory technique *re* sterilisation, healthy state of guinea pigs, careful numbering of specimens, etc., is above suspicion, a difference of opinion may arise due to the difference in the amount of milk examined. There was no reason to believe that a different technique had been employed by the two laboratories.

The standard in use was detailed by one of these authorities as follows: 150 c.c. milk, centrifuged at 3,000 revolutions per minute for half an hour, the deposit being inoculated into two guinea-pigs. An instance was given by this authority where a difference of opinion arose with another laboratory using only 50 c.c.'s of milk.

The M.O.H. concludes by making the following deductions from these considerations:—

"Is is clear that the biological test, while extremely useful, is not always a certain means to the detection and eradication of tubercle contaminated milk from a milk supply. Apart from the delay before the result of the biological test is to hand, there may exist fallacies in both the positive and the negative result. It is evident that unremitting care and attention on the part of those concerned with the handling of this difficult problem is required in order to obtain satisfactory results.

(*Continued at foot of col.* 1, *page* 880.)

XUM

Abstracts

[Researches into the Cause of Grass Tetany and the Greater Incidence of this Disease. Sjollema. *D. T. W.* Nos. 15 and 16. April 9th, 1932, April 16th, 1932. p. 225 and p. 245.]

On the basis of his researches the author affirms that improper nutrition is to be regarded as the most important cause of grass tetany in cattle. The first part of this article is almost wholly taken up with a discussion of a series of chemical analyses and experiments on nutrition in cows which enable him to draw the above conclusion. From blood analyses it would appear that towards the end of the stall-feeding period, the mineral balance in many cows is not quite normal and that these animals in fact are in a condition of lowered resistance (latent tetany). When exposed to the action of additional nutritional imbalance, as happens at the commencement of the grazing season, such animals are very susceptible to the onset of functional disturbances and especially to grass tetany.

It is necessary to provide better mineral nutrition during the period of stall-feeding, particularly for cows which calve towards the end of this period, in order to reduce deficiency. The changes in the system of feeding cows, feeding little hay and large quantities of maize and rye, are regarded as the cause of the great spread of grass tetany. Other factors or combination of factors may assist in transforming the latent into the acute disease, and there is also the matter of individual idiosyncrasy. Sometimes tetany may result from feeding too much earth nut meal. Another chief cause is the unfavourable composition of fresh young grass, which the author's experiments show may contain a high content of crude protein, too much nitrate, and also a lowered sodium and increased potassium content. The danger of nutritional imbalance which here exists is considerably increased in animals which have already suffered during the stall-feeding period. Since these and other less easily-assessed factors are active it follows that the maintenance of a powerful constitution in the animals is a prime consideration.

The risk of grass tetany would probably be diminished by a more gradual change over from winter to grass feeding, and by keeping the animals overnight in their stalls. Sudden changes from poor to rich pastures are to be avoided. The author's opinion is that more errors are made in the nutrition of dairy cows than is generally assumed, and the fact that grass tetany is nowadays commoner is doubtless the result of the changes in the system of management, especially in the feeding of artificial foods and in the manuring of pastures.

Functional disturbances are influenced by many factors, such as the sympathetic nervous system, endocrine glands and hormones, ions in the tissues and body fluids, etc., and a point may be reached when the organism is incapable of maintaining its *milieu-intérieur* (Claud Bernard). Since the constitution of an animal is an index of its functional capacity it follows that an expression of this metabolic imbalance will manifest itself in the weaker animals. During high milk production and the demands of reproduction the capacity of the organism to maintain equilibrium is diminished. The difficulty in studying these functional disorders is the variety of interacting biochemical processes which occur in the living animal; one change produces many others and if the deviation is too great normal functioning is suspended. Thus it is clear that it is often impossible to affirm whether changes are primary or secondary.

A thorough investigation along these lines would probably be serviceable not only in the elucidation of the causes of grass tetany, but also in explaining the pathogenesis of associated diseases.

In Holland, grass tetany occurs very often on marshy pastures and on moorlands, and almost all cases occur during the first few weeks of pasturing and less frequently in the autumn. About eighty veterinarians have communicated their experiences regarding the occurrence of grass tetany, but these reports were often in contrast. However, because a certain circumstance does not appear to cause grass tetany, it is no proof that it never enters into the etiology of the disease.

The author records that favourable results have followed the use of calcium and magnesium given intravenously. A solution is prepared by dissolving 40 grams calcium chloride, 15 grams magnesium chloride in 300 c.c.s water, and one-half to two-thirds may be injected intravenously.

W. L. S.

"Although great care may be exercised by the Health Authority in instituting regular biological tests of milk supplies and regular veterinary inspection of herds, it is clear from the above-mentioned considerations that these safeguards are not always adequate. It is equally clear that only milk which has been suitably produced or adequately treated may not carry risk of tuberculous infection to the consumer."

According to the annual report of the Ministry of Health, the number of samples of milk analysed was 70,201—a new record. Of these 6·4 per cent., as against 6·6 per cent. last year, were adulterated or not up to the standard.

[The Specific Treatment of " Parturient Blackquarter " and other Gas Œdema Diseases of the Domestic Animals. Flückiger, G. *Schweiz. Archiv. f. Tierhlk.* 1932. Vol. 74. No. 2.]

This paper is introduced with a summary of the knowledge of anærobic gas-producing organisms which affect mankind. According to Weinberg and Séguin there are four of these:—*B. welchii (perfringens), B. œdematiens (œdematis maligni* Novy), *Vibrion septique* (Pararauschbrand [Parablackleg] bacillus of the Germans), and *B. histolyticus.*

The author describes a gas œdema infection which follows injury to the genital tract after parturition in cattle. Blackquarter is, of course, the commonest infection of the gas œdema type in cattle.

A polyvalent antigangrene serum is prepared against the four man-pathogenic organisms named above by the Pasteur Institute at Paris, and the author employed it in multiple doses in several cases of infection clinically diagnosed as of the gas œdema type in horses and cattle. He judges it as very good in connection with these cases. Up to the present time blackquarter and malignant œdema organisms are often found, but neither of the other two named above has been observed. Special work on the anærobes pathogenic to domestic animals in Switzerland is desired.

J. E.

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[The Difference between the Porcine Carcass which has been Scalded and that which has been Singed in regard to Resistance to Superficial Putrefaction (trans. title). Hülphers, Professor G., and Laftman, B. (1932). *Skand. Vet.-tidskft.* 4. 147-152. 1 table. Summary in English.]

In England, Hungary, France and Denmark the porcine carcass is often singed immediately after slaughter. The price realised for such carcasses is higher owing to the idea that they " keep " better. The authors carried out experiments to determine if there were grounds for such a belief. A series of singed carcasses and scalded carcasses was allowed to hang in the cooling hall of an abattoir for seven days. Each day a small piece of skin was removed from the dorsal and inguinal regions and transferred, with the usual precautions, into culture material. After incubation the cultures were examined, the colonies counted and their type determined. The results are set out in tabular form. Many more organisms were present in the skin of the scalded carcass and multiplication took place much more rapidly than in the singed specimen. The average number of organisms from the skin of the singed carcass was 827; from the scalded carcass it was 48,944. Moreover, the scalded carcass at the end of a week showed fairly extensive putrefaction on the surface. An account is given of the bacterial flora of the skin sample in each case. The bacteriological counts and examinations were carried out by the staff of the Veterinary School, Stockholm.

G. B. B.

NATIONAL VETERINARY MEDICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND

Quarterly Meeting of Council

The Summer Quarterly Meeting of Council N.V.M.A., was held at 10, Red Lion Square, London, W.C.1, on the afternoon of Tuesday, June 28th, 1932.

The President of the Association (Lieut.-Colonel P. J. Simpson) occupied the Chair, and there were also present: Messrs. H. Bell, J. C. Coleman, Major A. C. Duncan, Messrs. H. Gooch, L. Hughes, Major H. Kirk, Professor J. Macqueen, Messrs. G. P. Male, G. T. Matthews, Major-General Sir John Moore, Mr. R. B. Nelder, Major D. S. Rabagliati, Messrs. H. P. Standley, W. R. Watson, Professor A. W. Whitehouse, Mr. R. A. Willett, Dr. W. R. Wooldridge and Lieut.-Colonel T. Dunlop Young, together with the Hon. Secretary (Mr. J. W. McIntosh), the General Secretary (Mr. F. Knight) and the Association's Solicitor (Mr. C. O. Langley).

The minutes of the April meeting of the Council, having been printed in the *Veterinary Record*, were taken as read and were confirmed and signed. There being nothing arising from the minutes, the President called for the correspondence.

CORRESPONDENCE

(1) From the following members of the Council, intimating, with regret, their inability to attend the meeting:—Dr. O. Charnock Bradley, Mr. W. H. Brooke, Mr. J. Clarkson, Mr. H. W. Dawes, Major Brennan de Vine, Major F. L. Gooch, Major T. Dalling, Major G. W. Dunkin, Mr. G. N. Gould, Major J. G. McGregor, Dr. R. F. Montgomerie, Captain S. J. Motton, Mr. W. Nairn, Major R. H. H. Over, Captain J. R. Rider, Mr. J. N. Ritchie, Captain R. Simpson, Mr. H. P. Standley, Jun., Captain W. K. Townson, Mr. William Woods, Captain W. G. Wragg (Hon. Treasurer) and Professor G. H. Wooldridge.

ROYAL INSTITUTE OF PUBLIC HEALTH CONFERENCE ON TUBERCULOSIS

(2) From the Secretary of the Royal Institute of Public Health, dated April 12th, inviting the Association to send two delegates to attend a conference on " Tuberculosis," convened by the Institute, to be held at 37, Russell Square, W.C.1, on Monday, May 2nd.

Subsequent correspondence disclosed the facts

that, on the President's initiative, the invitation had been accepted and that Mr. G. P. Male and Major D. S. Rabagliati had undertaken, at his request, to represent the Association.

The Secretary read the report to Council submitted by these delegates, as follows:—

"Mr. G. P. Male and Major D. S. Rabagliati, nominated by the President, represented the Association at a Conference called by the Royal Institute of Public Health to consider measures for reducing the incidence of and mortality from tuberculosis amongst children and young adults, held at 37, Russell Square, W.C.1, on Monday, May 2nd, 1932.

"Dr. Annis, Medical Officer of Health for Greenwich, presided, and the following also were present:—Sir Merrik Burrell, representing the Royal Agricultural Society; Messrs. Whitley and Stapleton, representing the British Dairy Farmers' Association; Mr. F. H. Sanderson, representing the National Cattle Breeders' Association; Messrs. Bird and Wood, representing the Co-operative Wholesale Society.

"The following proposals were made by the Chairman in his opening remarks:—

(i) That steps should be taken by means of lectures, the distribution of literature, etc., to educate the general public to the value of having milk pure at its source.

(ii) That the Ministries of Agriculture and Health should be approached with a view to obtaining their co-operation in carrying on such propaganda; in bringing about the standardisation and control of tuberculin, and in securing financial assistance in eradicating tuberculosis from dairy herds by means of a scheme such as that prepared by the N.V.M.A.

(iii) That should Government assistance not be forthcoming, consideration should be given to the question of raising in other ways funds to assist owners who are not able, through financial circumstances, to have their herds dealt with.

(iv That the present meeting should form a Sub-committee to work in active co-operation with the Royal Institute of Public Health in pursuing the question.

"After a long discussion, mainly upon the N.V.M.A. scheme, it was agreed that the conference should be adjourned until information was available regarding the composition and terms of reference of the Committee which the Minister of Agriculture intends to set up to enquire into the incidence of disease in dairy herds."

The President proposed a hearty vote of thanks to the Chairman of the Veterinary Officers' and Public Health Committee (Mr. Male) and to Major Rabagliati for their attendance and report, and expressed the hope that, when that matter was again taken up, they would be in a position to represent the Association again.

The proposition was carried.

The Secretary informed the Council that a further meeting of the Pure Milk Committee (established by the R.I.P.H. with representatives of other bodies interested in the provision of a pure milk supply) was called for the following Friday, to go further into this matter. The Council requested Mr. Male and Major Rabagliati to attend on their behalf.

(3) From Mr. W. C. Miller, Hon. Secretary of the Scottish Branch, dated April 14th, in the following terms:—

"I am instructed by the Executive Committee of the Scottish Branch to refer to your recent letter in which it is announced that the Council of the N.V.M.A. decided to make a contribution not exceeding £20 per annum to the funds of the Branch. This decision the Branch Executive Committee considers to be very satisfactory and encouraging, and I am to ask you to convey the thanks of the Branch Executive Committee to the Council."

The President: "That also is very satisfactory, gentlemen." (Hear, hear.)

(4) The Secretary reported the receipt of an invitation addressed by the Lord Mayor of London to the President or Representative of the N.V.M.A. to attend a meeting to be held at the Mansion House on July 11th, to consider The People's League of Health's report and recommendations on tuberculosis and the milk supply.

The President or his nominee was appointed to attend.

(5) From the Hon. Secretary of the Scottish Branch, dated June 20th, as follows:—

"Dear Sir,

"At the request of the Department of Agriculture for Scotland, the Scottish Branch Executive Committee considered the question of a panel of referees to serve under the Improvement of Livestock (Licensing of Bulls) Act, 1931. This Act comes into operation in Scotland on August 1, 1932.

"During the discussion it was pointed out that, as at present constituted, the Act permits a lay inspector appointed by the Government Department concerned to exercise discretionary powers where questions of diseased conditions in bulls submitted for licence are concerned. The inspector may, in fact, grant a licence to a bull which is in his opinion healthy but which is actually suffering from some contagious or infectious disease which he cannot or does not recognise. It is only in the event of the withholding of a licence or its suspension that an owner may appeal to have his animal examined by one or more members of the panel of veterinary referees. It is exceedingly probable that in the majority of instances where a bull has been refused a licence and an appeal is made by the owner, the veterinary referee will be able to do nothing more than to confirm the diagnosis of the existence of disease noticed by the lay inspector.

"In the opinion of the Committee this is not quite the function of the professional man, nor in keeping with his dignity.

"On the other hand, there is every possibility that lay inspectors may fail to notice signs of disease which might be discerned by a qualified veterinary surgeon, and may grant licences to such bulls as exhibit them. In this way the working of the Act will be brought into disrepute.

"The Scottish Branch Executive Committee are of the opinion that a clause should have been

added making it incumbent upon an owner to have his bull examined by a veterinary surgeon who would grant a certificate of health. This would be forwarded to the Government Department concerned when application for inspection was made.

"The advantages of some such clause as this, giving a health examination priority over an inspection by a layman, are so obvious that they require no further amplification.

"The Branch Committee would be exceedingly glad to have the observations of the Council and of its Parliamentary Committee upon this matter.

"I was further desired to express the keen disappointment experienced by the members of the Committee when they realised how unsatisfactory was the framing of this Act.

"I shall be glad if you would bring this letter before the Council at the earliest opportunity.

"Yours faithfully,
(Signed) "W. Miller,
"*Hon. Secretary.*"

The Secretary stated that Sir Archibald Sinclair mentioned in the House of Commons on June 22nd that two inspectors and one part-time advisory officer had been appointed for the purposes of that Act. Accordingly, he wrote to Mr. Miller and asked whether he could supply the names of the officials referred to by Sir Archibald Sinclair and what qualifications they held.

Mr. Miller's reply was read by the Secretary.

The President: "There is no line suggested that we should take?"

The Secretary replied that the Scottish Branch Executive asked that representations be made to the Ministry that owners desiring their bulls to be licensed should send with their application a certificate of health granted by a veterinary surgeon. He might add that, while the Scottish Act comes into force on August 1st, the English Act would not become operative until 1934.

Mr. J. W. McIntosh thought that the point raised by the Scottish Branch was a very important one, and that the endeavour being made in regard to that requirement should be supported. The men appointed were all very practical men, but they were not qualified men in the sense that a veterinary surgeon was, and in his view a certificate of health granted by a veterinary surgeon ought to be an essential requirement before any livestock improvement scheme was on an effective basis. He thought they should support the views of the Scottish Branch, and if it was necessary he should be prepared to suggest that they remit the matter to the Parliamentary Committee for further consideration.

Major Rabagliati enquired if there were any information that, in the opinion of the Scottish Branch, the certificate they suggested meant freedom from tuberculosis or merely freedom from any clinical signs?

The President replied that he thought they really meant just a clinical examination.

Mr. McIntosh's proposition having been seconded by Major Rabagliati, Dr. Whitehouse pointed out that the Act came into operation in five and a half weeks, and the profession was asked to supply a panel of inspectors by that time. If the matter were referred to the Parliamentary Committee it would merely be shelving it, as far as that aspect was concerned.

The President informed Dr. Whitehouse that the communication was received too late to be laid before the meeting of the Parliamentary Committee held on the previous day.

After further discussion, it was agreed that the matter be referred to the Parliamentary Committee and that the Scottish Branch be informed that the Association would be willing to support them should they decide to press their claim for a regulation making it incumbent upon an owner to have his bull examined by a veterinary surgeon who would grant a certificate of health.

MEMBERSHIP OF THE ASSOCIATION

The Secretary reported that at that date (June 28th, 1932) the membership of the Association stood at 1,650, seven members having been lost by death since the date of the last meeting of Council (in April).

The Council stood while the following Obituary List was read:—Messrs. J. Caldwell, F. H. W. Cundell, S. Jackson, R. McDonnell, Major R. E. Montgomery, Messrs. R. Rimmer and S. H. Slocock.

Tributes to the late Mr. Slocock and the late Major Montgomery.—The President now rose to say that, before passing on to other matters, he was sure that everyone present would wish the Council to give expression to its sense of the great loss the Association had sustained in the death of two of the members whose names had been read. He would refer, first, to the late Mr. Sydney Howard Slocock, who was a very old and trusted member of the Council of the Association in days gone by and a whole-hearted supporter of its work. Mr. Slocock had been missed from the Council of the Royal College and equally missed from the deliberations of that body.

More recently the death of Major Montgomery had occurred: in that bereavement the whole profession had suffered grievously. Major Montgomery was known to many of them, and to those of them who were privileged to know him he was revealed as a most charming man, a man of infinite tact and, in fact, one who might correctly be termed the right man in the right place in the position he held at the Colonial Office. Indeed, it might be very difficult for the next member of the profession who stepped into the late Major Montgomery's shoes to carry on on such splendidly successful lines as their deceased colleague had done.

He felt certain that they would wish that an expression of the feelings of the meeting concerning the loss of Mr. Slocock and Major Montgomery should be recorded in the minutes. (Hear, hear.)

Mr. J. W. McIntosh desired to be allowed to

associate himself with the words spoken by the President. It had been his privilege and pleasure to know both those gentlemen very well indeed. He had known Mr. Slocock ever since he (the speaker) came to London, 26 or 27 years ago, and to know him was to respect him and love him. Mr. Slocock did much for his profession and his keen interest in, and his work for, the Victoria Veterinary Benevolent Fund was well known to all.

Major Montgomery he had known, he thought, longer than had anyone else in that room. Major Montgomery had been a pupil of his, and the high opinion he had then formed of his character and ability had been more than borne out in his subsequent brilliant career.

Major Montgomery, always a warm supporter of that Association and his profession, was a man of high scientific attainments, a man possessed of a charming manner, and ever a warm-hearted friend. It was with deep sympathy that he supported the words that had been expressed by the President.

New Members.—The following gentlemen, having duly completed the requisite form of nomination and paid their subscription, were unanimously elected as members of the Association, on the proposition of Major Rabagliati, seconded by Dr. Whitehouse: Messrs. C. W. Abrams, E. R. Ambrose, N. M. Clayton, P. Crosfield, Lieut.-Colonel W. J. Dale, Messrs. W. Gray, P. Leckie, W. A. Milligan, J. F. Rankin, Lieut. P. A. Reeves (R.A.V.C.), Messrs. N. R. Reid, W. K. Stevens, and Captain A. Temple.

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH

The following report, presented by Mr. J. Ewing Johnston and Mr. J. Loughran as the Association's delegates to the Belfast Congress of the Royal Institute of Public Health, was read by the Secretary:—

"May 18th, 1932.

"We beg to report that, in accordance with your wishes, we attended the recent Congress of the Royal Institute of Public Health at Belfast; and amongst a great number of very interesting and valuable papers, the following were those of particular moment to veterinary surgeons:—

"No. 1. Lieut.-Colonel T. Dunlop Young, O.B.E., D.V.S.M., M.R.C.V.S., Chief Meat Inspector to the Corporation of London, gave a most interesting paper (with lantern demonstrations) showing in most graphic fashion the development of the meat trade in the Argentine, and particularly indicating how traders over there have entirely altered the character of their trade in order to meet the wishes of the consumer; whereas in the olden times they produced fat carcasses, when they found that the consumer desired smaller joints, less bone, and very little fat, they immediately set to work to find the class of animal which would fulfil these requirements. One of us (J. Ewing Johnston) was so impressed with this paper and demonstration that he has asked Colonel Young to come to Belfast in a few weeks' time to give this paper and lantern demonstration again on the occasion of the Ulster Agricultural Show, by which means he hopes to educate the local cattle breeders and farmers as to how they may improve their methods to compete with the chilled meat trade..

"No. 2. Mr. P. F. Dolan, M.R.C.V.S., D.V.S.M., Chief Veterinary Inspector to the Corporation of Dublin, also gave a very interesting paper showing the methods at present adopted and how those methods had been evolved in connection with the Dublin meat trade; and it was by a strange coincidence that he, in a few slides, showed almost exactly the same sort of animal that best meets to-day's requirements.

"No. 3. A paper on "Bovine Tuberculosis," by Mr. A. M'Lean, M.R.C.V.S., D.V.H., City Veterinarian, Belfast Corporation, was unfortunately not read, as the discussion on the previous papers took up the whole of the available time.

"In the discussion, Dr. David Lees spoke about the advisability of utilising veterinary surgeons in preference to medical men for all duties in connection with cattle and meat inspection; and similarly the training of persons in connection with those duties.

"In reply to the various enquiries, Colonel Young was able to state that the Royal Institute of Public Health was, as far as he knew, practically the only institution training medical men in connection with their studies for the Diploma in Public Health, which utilised to the full the services of veterinary surgeons for that purpose; and he intimated that, from his knowledge, he understood that the Institute was in favour of utilising as fully as possible their services on the lines suggested by Dr. Lees.

"Dr. E. G. Annis, the Acting Principal of the Institute, announced the steps that had been recently taken by the Institute in connection with the campaign for providing a milk supply for the whole country pure at the source. He informed the Congress that an influential Committee had been formed composed of representatives from the National Veterinary Medical Association, the Royal Agricultural Society, the National Cattle Breeders' Association, milk distributing firms, and other bodies connected with the milk trade, with this as its sole object. He stated that the lines upon which they proposed to act were to encourage the respective Ministries of Health and Agriculture to give greater attention to this matter, providing further legislation where it might be required; to endeavour to educate the general public, including the medical profession, as to the value of pure milk; to press upon local authorities the advisability of appointing qualified Veterinary Officers for every district, and administering the present Tuberculosis Acts and Orders efficiently.

"As you may imagine, this statement was heartily approved by the Section, and in further conversation the suggestion was made that a definite Veterinary Section should be revived in connection with the programme of the Eastbourne Congress next year, as it was felt that the veterinary surgeons generally would give the institute their hearty support in furthering the programme outlined above.

With reference to the Congress generally, we cannot enter into details, but can only state that it was very satisfactory in every way."

J. Ewing Johnston, m.r.c.v.s.
J. Loughran, m.r.c.v.s.

The President commented that the Council had heard a very interesting and a very encouraging report: it would appear that the Congress thoroughly backed up the Veterinary Profession, which was as it should be. There was not much to be discussed in it: it was all good news.

Mr. McIntosh observed that he thought they would all wish to express their thanks to Mr. Ewing Johnston and Mr. Loughran for their attendance and for the excellent report that they had furnished. (Hear, hear.)

Reports of Standing Committees

Organising Committee:

In the absence of the Chairman of this Committee (Captain J. R. Rider) the Secretary read the following report:—

A meeting of the Organising Committee was held at the offices of the Association on Monday, June 27th, 1932.

In the absence of Captain J. R. Rider, the Chair was occupied by Major-General Sir John Moore.

The Minutes of the previous meeting were read and signed as correct.

Arising from the Minutes, letters were received from the R.S.P.C.A. in reply to the communications which had been addressed to them on the instructions of the Committee.

Reports were received from a number of Divisions indicating the progress made in the negotiating of schemes for providing free veterinary treatment for animals of the poor. These reports were considered satisfactory.

The Secretary informed the meeting that three cases of advertising by unqualified persons had been dealt with by counter-announcements during the past quarter. The Committee approved the action taken.

Newspaper-cuttings were presented showing that the article "The Veterinary Profession and its Obligation to the Public" had made its appearance in other newspapers since the last meeting, and that the second article "Some Recent Advances in Veterinary Science" had also been published in several newspapers and technical journals in different parts of the country.

Reception of the report having been moved by Sir John Moore and seconded by Mr. R. B. Nelder, Major Rabagliati informed the Council that a sub-committee of the Yorkshire Division had been co-operating with the R.S.P.C.A. in Yorkshire and that very good work was being done in getting into operation in that area an effective scheme of professional treatment for the sick animals of poor persons.

Mr. G. P. Male (President, Royal College of Veterinary Surgeons) said that he thought it was rather important, in carrying out the scheme for the provision of professional treatment for the sick animals of poor persons, that all the members in the particular locality concerned should be notified of any scheme that was on foot before any final arrangements were made. He thought they should impress that upon all local Divisions, otherwise it was sure to fail. That had, of course, already been pointed out to the R.S.P.C.A., but, as they would all see, that body had not the same degree of authority over their local branches that was perhaps possessed by the N.V.M.A. over its Divisions: the local branches of the R.S.P.C.A. were quite autonomous, and although the headquarters of that organisation appreciated the National's point of view very thoroughly, there was that difficulty, and they wanted them to realise it as clearly as possible. At the same time, he hoped that the R.S.P.C.A. branches would carry out what was not only the desire of the N.V.M.A. in that regard, but also the desire of their own headquarters.

Mr. W. R. Watson informed the Council that the practitioners of Bristol, in co-operation with the local branch of the R.S.P.C.A., were successfully operating a scheme of treatment for the animals of poor persons in that city. Not only were all the veterinary surgeons in the city on the rota, but, he believed, all were also members of the R.S.P.C.A.; in fact, the scheme was an outstanding example of the value of mutual co-operation. All concerned were, he thought, very satisfied with the manner in which the scheme was working. (Hear, hear.)

Major H. Kirk, in moving the adoption of the report (which was seconded by Major Rabagliati and carried), asked the Council to note how very voluminous was the work done by the Organising Committee: what the Association did before it had such a committee, he could not quite understand.

Appointments Committee:

Professor Macqueen (Chairman) read and moved the reception and adoption of the following report of this Committee:—

A meeting of the Appointments Committee was held at 2, Verulam Buildings, on Monday, June 27th, 1932, with Professor James Macqueen in the Chair.

The Minutes of the previous meeting were read and signed as correct.

Arising from the Minutes, a reply was received from the Colonial Office on the subject of the suggested amalgamation of the Agricultural and Veterinary Services in Uganda. It was understood that the points raised by the N.V.M.A. were not being overlooked, but that it was not at present possible to give any indication whether the recommendations of the Uganda Finance Committee will or will not be accepted and put into effect.

The Committee came to the conclusion that no further action could usefully be taken in this matter at present.

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Consideration was given to letters from a member regarding his removal from a Local Authority appointment, and also to a communication from the Veterinary Medical Association of Ireland on the subject.

It was decided that no good purpose was likely to be served by the Association's intervention in this dispute.

The report was adopted without discussion, Dr. Wooldridge having seconded.

Veterinary Officers' and Public Health Committee:

This report was read, and its reception moved, by the Chairman of the Committee (Mr. Male):—

The Veterinary Officers' and Public Health Committee met at the Offices of the Association on Tuesday, June 28th, Mr. G. P. Male being in the Chair.

The Minutes of the previous meeting were read and signed.

Arising from the Minutes, the Chairman made a verbal report upon his attendance as delegate to the Annual General Meeting of the National Cattle Breeders' Association at which he had explained the N.V.M.A. Scheme for the Eradication of Bovine Tuberculosis and answered numerous questions with regard to it. It was understood from Mr. Male's report that the reception accorded the Scheme was not altogether favourable, the chief reasons for this attitude being the variable results of the application of the Double Intradermal Test, the question of finance, and that of keeping herds clean after they have been rendered free by testing.

The feeling of the National Cattle Breeders' Association seemed to be that until the test had achieved a greater degree of reliability, and the finances of the country were in a better position, the scheme should not be put into operation.

It was reported that, at the request of the Editor of the *British Journal of Tuberculosis*, an article dealing with the Association's Scheme had been prepared for publication in that journal.

Further consideration was given to the Committee's draft tuberculin test certificates in the light of the President's report on his enquiries at the Ministry of Health.

After discussion, it was eventually decided to restrict the application of the certificates to those animals which were submitted for sale in the open market, and it was agreed to recommend to the Council that books of certificates, to be supplied by the Association at a charge to be decided later, should be prepared as follows:—

(i) Books in quarto size containing 100 certificates and carbon copy for recording the result of testing one animal by the Double Intradermal Test.
(ii) Similar books for the Subcutaneous Test.
(iii) Books in quarto size containing 100 certificates and carbon copy for recording the results of testing up to 10 animals by the Double Intradermal Test.
(iv) Similar books for the Subcutaneous Test.

The Secretary was instructed to make enquiries in regard to serial enumeration for each set of certificates, and to ascertain the possibility of the insertion of the practitioner's address on the form of certificate should this be desired.

The Secretary was further instructed to endeavour to obtain printer's proofs for submission to the next meeting of the Committee.

Dr. Whitehouse having seconded the motion for the reception of the report,

Mr. J. C. Coleman expressed the opinion that the application of tuberculin test certificates should not be restricted to those animals which were submitted for sale in the open market, but should also be applied to those submitted for private sale and for exportation.

Mr. Male endorsed this opinion, and the report, thus amended, was adopted, on the proposition of Mr. Coleman, seconded by Mr. McIntosh.

Finance and General Purposes Committee:

The Secretary read the following report of this Committee, of which the President is Chairman:—

There have been two meetings of the Finance and General Purposes Committee during the past quarter, under the Chairmanship of the President.

At the last meeting of the Council it was resolved to act upon a resolution received from the North of England Division pointing out the disparity in the terms upon which biological products are sold, by manufacturers, to veterinary surgeons and retail chemists. This matter was recently discussed with representatives of the manufacturers concerned, but the Committee regrets to report that it was not found possible to arrange better terms for members of the profession.

It has been decided to recommend to the Council that Article of Association No. 24, the functioning of which has been held in abeyance, should now be brought into operation. The Article reads:—

> "A branch or division shall not be recognised as a branch or division unless so approved by the Council and on payment of such annual or other fee as the Council may from time to time determine."

The fee in question is fixed by bye-law as the nominal one of one shilling.

All members of Council have received a copy of the recommendations made by the Sub-Committee appointed to examine the Association's Articles. These recommendations have been considered by the Finance and General Purposes Committee and they are recommended for acceptance by the Council, subject to the following modifications. . . .*

A Sub-Committee has considered the question of the establishment of a scheme of superannuation for the paid staff of the Association. It is recommended that such a scheme should be arranged, towards which the staff should contribute one-third of the insurance premiums.

The President said that it was necessary to go through all those proposed alterations in the Articles before moving the reception of the report. They had all had those proposed alterations sent out to them. He desired, on the advice of the solicitor, to take a resolution receiving and adopting the report of the Finance and General Purposes Committee as far as the point at which the proposed new Articles were dealt with, and then they could go on with the consideration of those Articles, each of which could be discussed as it arose. As Chairman, therefore, he would move the reception and adoption of the report to

* These modifications were dealt with by the President in his general survey of the subject (*q.v.*) following the presentation of the report.—Ed., *V.R.*

that point. In doing so, he would like to clear up a point that might otherwise create a little uneasiness in the minds of local Branches or Divisions of the Association with regard to the fee of one shilling. It would be remembered that at one time the fee was a capitation one: it was not the intention of the Committee to revert to that, but merely to bring into operation the Article (No. 24) providing for the payment of an annual fee of one shilling by each Branch or Division, as a nominal fee for affiliation to the parent body.

Concerning the question of the superannuation scheme, it had been felt that it would be wise—as was done in many similar associations and corporations—to help to make some provision for their staff in the case of long service or death—assisting towards making provision for the widow, etc. The Committee had therefore recommended to them that such a scheme be put into force. Various schemes had been considered, though none had as yet been selected, and the Committee desired to have the Council's permission for the inauguration of such a scheme. If that were forthcoming, a choice of the most appropriate scheme would be made.

The motion for the reception and adoption of the report, exclusive of that portion relating to the Articles of Association, was seconded by Mr. Nelder, and carried unanimously.

Proposed New Articles of Association

The Council now gave consideration to the report of the Sub-Committee appointed to investigate any alterations that may be desirable in the Association's Articles of Association. Four meetings of this Sub-Committee were held and, after consultation with the Solicitor, the recommendations which follow were made. [In connection with each Article which it is proposed to revise, we give (1) the Article in its present form; (2) the Article in the form to which it is suggested that it shall be altered; (3) the President's explanatory comment to Council.—Ed. *V.R.*]

Article 1. *Present form*:—In these Articles unless there is something in the subject or context inconsistent therewith:—"The Association" means The National Veterinary Medical Association of Great Britain and Ireland."

Recommended that this Article be amended by deleting the words "The National Veterinary Medical Association of Great Britain and Ireland" and substituting therefor the words "The British Veterinary Association."

The President observed that this was considered at the last meeting of the Council and—in common with all those suggested revisions of the Articles—it had to be ratified by an Extraordinary General Meeting of the Association. It had already been agreed by the Council that it should go forward to that meeting that the title of the Association should be "The British Veterinary Association."

Dr. Whitehouse enquired if the matter could be re-opened on this occasion, but the President ruled against him.

Approved (for presentation to Extraordinary General Meeting).

Article 11. *Present form*:—Any member of the Royal College of Veterinary Surgeons or holder of the Veterinary Certificate of the Highland and Agricultural Society shall be eligible as a member of the Association.

Recommended that this Article shall be amended by the deletion of the words "or holder of the Veterinary Certificate of the Highland and Agricultural Society," thus making the Article read: "Any member of the Royal College of Veterinary Surgeons shall be eligible as a member of the Association."

The President pointed out that, while the words "or holder of the Veterinary Certificate of the Highland and Agricultural Society" had been deleted he had been given to understand that the Association had no member who actually held that Certificate as his sole qualification for eligibility as a member. Moreover, there was no other need for the retention of those words, as no further Certificates would be issued.

Approved (for presentation).

Article 19. *Present form*:—"Eminent professional and scientific persons and others not qualified for admission under Article 11, who may have rendered distinguished service to the Association or to the veterinary profession, or who in the opinion of the Council will confer honour on or advance the interests of the Association may be elected honorary members by the General Meeting of the Association on the recommendation of the Council.

Recommended that this Article be altered by the deletion of the words from "Eminent" to "profession" (both inclusive) and substituting therefor the words:—"Such eminent professional and scientific persons and others who may have rendered distinguished service to the Association or to the Veterinary profession, or to the advancement of Veterinary Science," thus making the Article read:—"Such eminent professional and scientific persons and others who may have rendered distinguished service to the Association or to the Veterinary Profession, or to the advancement of Veterinary Science, or who in the opinion of the Council will confer honour on or advance the interests of the Association, may be elected honorary

members by the General Meeting of the Association on the recommendation of the Council. . . ."

The President said that that suggested amendment was made because, as they would see by the wording of the existing article, no member or no person who was eligible for membership of the Association could have any honour conferred upon him by that body. That, they would agree, was a most unfortunate limitation, which it was now sought to remove. (Hear, hear.)

Approved (for presentation).

Article 27. *Present form*:—"Students at veterinary colleges of the United Kingdom may associate themselves together and so form a cadet branch affiliated to the Association on payment of an affiliation fee of two guineas for each branch formed, and subject to the approval of the Council or any standing or sub-committee appointed for that purpose. All members of such cadet branches who shall have commenced their final year of study at any such college as aforesaid, shall be entitled to receive the *Veterinary Record*, or other official publication of the Association on payment in advance of a subscription of one guinea. . . ."

Recommended (after consideration by the General Purposes Committee) *that* the whole of this Article be deleted and the following substituted therefor:—"Students at veterinary colleges affiliated to the Royal College of Veterinary Surgeons may associate themselves together and so form a cadet branch affiliated to the Association on payment of an affiliation fee of two guineas for each branch formed, and subject to the approval of the Council or any standing or sub-committee appointed for that purpose. All members of such cadet branches who shall have passed their third professional examination at any such college as aforesaid, shall be entitled to receive the *Veterinary Record* and other official publications of the Association on the payment in advance of an annual subscription of one guinea while still a student. . . ."

The President commented that the revised Article, enabling students who had passed their third professional examination to receive the official publications of the Association for one guinea per annum, brought requirements in this respect into line with the new five years' course.

Approved (for presentation).

Article 30. *Present form*:—"If the subscription of a member shall be in arrear for three months he shall cease to be entitled to receive the several publications of the Association or to attend or vote at any General Meeting of the Association. If the subscription of a member shall be in arrear for two years he shall cease to be a member of the Association."

Recommended that this Article be amended by altering the word "three" in line 2 above to the word "six," and the words "two years" in line 8 to the words "one year," thus making the Article read:—"If the subscription of a member shall be in arrear for six months he shall cease to be entitled to receive the several publications of the Association or to attend or vote at any General Meeting of the Association. If the subscription of a member shall be in arrear for one year he shall cease to be a member of the Association."

The President stated that the recommendation was that a member should be allowed six months' grace instead of three before the Association's publications were withheld from him. On the other hand, the period of grace in respect of actual membership was reduced from two years to one year.

Major Kirk enquired if that meant that a man in arrear was going to be allowed to receive copies of the *Veterinary Record* for three months longer than was the case at present. Receiving an affirmative reply, he commented that he failed to see the advantage to the Association, even though the period of grace as regards membership were curtailed to one year.

The President replied that there had been an outcry that the Association had perhaps been a little too severe in that matter of three months.

Approved (for presentation).

Article 40. *Present form*:—"The President of the Association, or in his absence the Past President, or in his absence one of the Vice-Presidents, shall be Chairman of the General Meeting. . . ."

Recommended that this Article be amended by altering the words "of the General Meeting" in line 5 above to the words "at all General Meetings," thus making the Article read:—"The President of the Association, or in his absence the Past President, or in his absence one of the Vice-Presidents, shall be Chairman at all General Meetings."

Sir John Moore thought that the General Purposes Committee had decided that the word "immediate" should be inserted before the words "Past President."

The President replied that that was done in connection with Article 59(a), but there was no reason why it should not also be done in connection with Article 40.

The Council approved the addition, and the amended recommendation therefore reads ". . . by inserting the words 'the immediate' before the words 'Past President' in the third line thereof, and by altering the words 'of the General Meet-

ing' in the fifth line thereof to the words 'at all General Meetings.'"

Approved (for presentation).

Article 42 (a). *Present form*:—"The business of an Ordinary General Meeting other than the first shall be to do all or any of the following things:—(a) Transact such business relating to the internal affairs of the Association . . . electing officers, *viz.*, President, Vice-Presidents, Treasurer and General Secretary . . ."

Recommended that this Article be amended by inserting the words "Honorary Secretary" between the words "Treasurer" and "and" in line 8 above, thus making the Article read:—(a) "Transact such business relating to the internal affairs of the Association . . . electing officers, *viz.*, President, Vice-Presidents, Treasurer, Honorary Secretary, and General Secretary . . ."

Article 49. *Present form*:—"There shall be the following officers of the Association, *viz.*, President, Past President, Vice-Presidents, Treasurer and General Secretary."

Recommended that this Article be amended by inserting the words "Honorary Secretary" between the words "Treasurer" and "and" in line 4 above, thus making the Article read:—"There shall be the following officers of the Association, *viz.*, President, Past President, Vice-Presidents, Treasurer, Honorary Secretary and General Secretary."

It was further recommended by the Finance Committee "That the word 'Honorary' be inserted before 'Treasurer' wherever it occurs in these Articles, so as to make it clear that the office is an honorary one."

The President observed, in connection with these two Articles, that the Association had, of course, had an Honorary Secretary for some years, but the post had never been given recognition in the Articles of Association, and they now wanted to secure its insertion.

Approved (for presentation).

Article 56. Recommended that a new Article be added, to be known as Article 56 (a), with a heading "Honorary Secretary" in the following words:—"56 (a) The Honorary Secretary shall be elected by the Ordinary General Meeting, and shall hold office for one year, but shall be eligible for re-election. He shall primarily be responsible for co-ordinating the relationship of the Council with Divisions and Branches, and shall perform such other duties as the Council may from time to time delegate to him."

That Article, said the President, would stabilise the office of Honorary Secretary.

Approved (for presentation).

Article 59 (a). *Present form*:—". . . Thenceforth the Council shall come into office at the termination of the Ordinary General Meeting and shall be composed as follows:—

(a) The President, Past President, Vice-Presidents and Honorary Treasurer."

Recommended (after consideration by the the General Purposes Committee) *that*, with regard to sub-section (a), the proposed new Article be re-drafted as follows:—"The President, the immediate Past President, Past Presidents, Vice-Presidents, Honorary Treasurer, and Honorary Secretary."

The President pointed out that that was rather a big alteration, and he would like to explain that he wanted to enable all those who had occupied the office of Past President to remain on the Council, because he could quote many instances of good men being lost to the Council, after having filled that office, through the failure of their local Division to re-elect them as their representatives to Council, forgetting that these gentlemen would no longer automatically take their seats on that body.

Approved (for presentation).

Article 66. *Present form*:—"At each Ordinary General Meeting the Council shall submit the name of the place of the next Ordinary General Meeting, and the names of the persons recommended to fill the offices of President, Vice-Presidents, Honorary Treasurer, General Secretary and Auditors."

Recommended that this Article be amended by inserting the words "Honorary Secretary" between the words "Treasurer" and "General" in line 7 above, thus making this Article read:—"At each Ordinary General Meeting the Council shall submit the name of the place of the next Ordinary General Meeting, and the names of the persons recommended to fill the offices of President, Vice-Presidents, Honorary Treasurer, Honorary Secretary, General Secretary and Auditors."

Approved (for presentation).

Article 73. *Present form*:—"The Provisional Committee shall be elected annually by the Council from candidates nominated for such Committee by the division in whose area the Ordinary General Meeting for that year is proposed to be held."

Recommended that the whole of this Article be deleted and the following substituted therefor:—"The Provisional Committee shall consist of the President, Past President, Vice-Presidents, the Honorary Secretary, and the Honorary Treasurer."

The President described the foregoing as one

of the most radical changes proposed by the Sub-Committee, and also passed by the General Purposes Committee. They would take Articles 73 and 74 together.

Article 74. *Present form*:—"The Provisional Committee shall consist of twenty-four members of the Association in addition to the Council of the Association, the members of which shall be *ex-officio* members of the Provisional Committee."

Recommended that the whole of this Article be deleted and that the following be substituted therefor:—"The Provisional Committee shall have power to co-opt members of the Association, especially any living in the area in which the Annual General Meeting is proposed to be held."

As members would know, proceeded the President, these Articles (73 and 74) concerned the constitution of the Committee charged with the duty of running the Annual General Meeting and Congress of the Association. It had been the past experience, he thought, of all Presidents—it certainly had been his—that a Provisional Committee of approximately 70 members had proved terribly unwieldly, and in an endeavour to improve matters it had been the practice of Provisional Committees to form an Executive Committee of half a dozen or so, who carried on in conjunction with the Local Secretary and the officials at headquarters. The whole thing appeared to him to be thoroughly cumbersome, and he thought that if approval were given to the alteration much benefit would accrue to the Provisional Committees of the future.

Mr. Male asked the President if he did not think that it would be of help to the Committee if the Past Presidents were included: it was essentially a Committee on which experience was of great value.

Dr. W. R. Wooldridge pointed out that the number of living Past Presidents was by no means small, and they might be laying themselves open to the charge of trying to run the Association with their Past Presidents—which charge, in view of the fact that Presidents nominated their successors, might then be an awkward one to refute. They could co-opt any Past Presidents whose services they desired.

The President said that his own opinion was that the immediate Past President would be sufficient, because under Article 74 the Provisional Committee could co-opt any members of the Association, whether they were Past Presidents or whoever they might be. (In reply to Dr. Whitehouse): At present the Local Secretary was appointed by the Executive Committee.

Professor James Macqueen did not agree with Article 73—and he included in his remarks Article 74. He had no particular objection to Article 73 as drafted, but he would make the suggestion that there should be added to it a part of Article 74, with the requisite modification of phraseology. The addition he would suggest was this: that after the word "Treasurer" in Article 73 there should be added the words "and not less than six or more than twelve members of the Association living in the area in which the Annual General Meeting is to be held." His reason for it was that he thought they ought to take a long view in that matter. At the present time, no doubt, they were quite satisfied with existing office bearers, but in the course of a few years they might have an executive consisting of office bearers who might band themselves together with the object of bringing about the collapse of the Annual General Meeting: that was a possibility, even if it might not be probable, and as that Article was likely to remain on the Statute Book for many years he thought they should take that precaution.

He objected to Article 73 because it was too exclusive. He did not think that the arrangements for the Annual General Meeting should be left in the hands of the office bearers alone. Certain difficulties were bound to arise; for instance, supposing they had an Annual General Meeting in Scotland—what were the office bearers to do without the addition of some local men? Of course the answer was that Article 74 allowed the office bearers to co-opt; but that was permissive: there was no guarantee that they would co-opt. He thought that Article 74 should read "shall co-opt," if it must have that phraseology, but he should prefer to add to it the clause he had just read. The two Articles should form one and that Article should read: "The Provisional Committee shall consist of the President, Past President, Vice-Presidents, the Honorary Secretary, Honorary Treasurer, and not less than six or more than twelve members of the Association living in the area in which the Annual General Meeting is proposed to be held."

The President asked if Professor Macqueen would agree to the Article reading that the Provisional Committee shall co-opt not less than six members of the Association—especially any living in the area in which the Annual General Meeting is proposed to be held—leaving optional the actual number co-opted.

Professor Macqueen having signified assent, the President read to the Council the suggestion from the Solicitor that Articles 73 and 74 be drafted into one, as follows: "The Provisional Committee shall consist of the President, the immediate Past President, Vice-Presidents, the Honorary Secretary and the Honorary Treasurer and shall co-opt not less than six members of the Association, especially any living in the area in which the Annual General Meeting is proposed to be held."

Approved (for presentation).

The Council approved the concluding recommendation of the Sub-Committee, that if the foregoing alterations be approved by the Extra-

ordinary General Meeting, the Articles, as amended, and Memorandum be reprinted in full.

HON. TREASURER'S REPORT.

In the absence of the Hon. Treasurer (Captain W. G. Wragg) the above report was read by the Secretary. The financial statement for the past quarter was also presented.

The Hon. Treasurer, in his report, expressed the opinion that the details given revealed a very satisfactory cash position. It must be remembered, however, that the Association had now reached a time of the year when the receipts month by month tended to fall, relying mainly as they did upon the sales and advertisements, with a few subscriptions and sundries.

The Hon. Treasurer's report and financial statement were adopted, on the proposition of Mr. R. A. Willett, seconded by Mr. McIntosh.

Editorial Committee:

Sir John Moore (Chairman) read and moved the reception and adoption of this report, as follows:—

During the past quarter the Editorial Com-Committee has sustained a severe loss by the passing of one of its members, Mr. R. E. Montgomery. As Members of Council will have noted from the references to his life and work which have appeared in the *Veterinary Record*, the late member's unrivalled knowledge of Colonial Veterinary Administration has proved of the utmost service to the Committee over a considerable number of years, while his well-informed reviews of Colonial Service reports have been a widely appreciated feature of the Association's journal.

Following a good deal of experimentation with various forms of photograph and engraving, the Committee has adopted the frontispiece portrait of the late William Hunting now in use, which it is hoped and believed meets with the approval of all members.

During a period which has witnessed the receipt for publication of a large volume of material of high quality, exceptional interest attaches to the series of lectures obtained through the courtesy of the author, Professor W. L. Williams, of Ithaca, New York, and of the Editor of *Veterinary Medicine*, Chicago, on the subject of the "Pathology of Reproduction in Domestic Animals." The Committee is glad to devote space to this material in the belief that clinical readers will find in it a stimulus to the increased study of the pathology of reproduction as it faces them in their daily experience with animals. Publication of the series will be continued weekly until it is complete.

The Council will learn with satisfaction that this year's Congress Handbook, for the production of which the Editorial Committee are responsible, is virtually ready for press and will be issued to members, together with copies of Congress papers, early next month.

The report was adopted without discussion, other than a comment from Mr. Coleman who, "speaking on behalf of 30 or 40 subscribers to the *Veterinary Record*," expressed deep appreciation of the "belated but welcome" appearance of their very worthy and beloved friend Hunting's portrait on the front cover of the Association's journal.

Provisional Committee:

In the absence of the Local Secretary (Major T. Dalling) the General Secretary read the following report:—

N.V.M.A. CONGRESS—FOLKESTONE, 1932

There has been no meeting of the Provisional Committee since the last report was presented to the Council, N.V.M.A., at the Edinburgh meeting. The Executive Committee have met and there have been several Committee meetings. Arrangements for the *Annual Banquet* are well in hand. Official invitations have been sent to the guests selected by the Executive Committee. The toast list has not yet been finally decided upon—much will depend on the acceptances received. Arrangements for music, etc., have been completed and among the artistes selected is a well-known London entertainer.

Arrangements for the *Exhibition of Surgical Instruments, Drugs, etc.*, are practically completed. A plan of the Woodward Hall has been sent to all exhibitors and definite sites have been allocated for the various stands. In all, twelve firms will be represented. The exhibition will be officially opened by the President at 9.30 a.m. on Monday, August 8th. We would specially ask for a large representation of members attending the Congress at this function.

The only *Excursion* arranged is that to Canterbury on Wednesday, August 10th. The Executive Committee have agreed that this shall be a full day excursion. Arrangements are being made whereby those attending will be shown over the Cathedral, etc., and will arrive back in Folkestone about mid-afternoon. This is primarily an excursion for ladies.

All other arrangements reported are well in hand. The applications for tickets, etc., are coming in very slowly. In order to facilitate the work of the Local Secretary I would beg you to make your applications as soon as possible on the blue form issued in the *Veterinary Record* a few weeks ago.

The President, having moved the reception and adoption of the report (seconded by Mr. McIntosh), paid a tribute to the hard work put in by the Local Secretary and the Executive Committee in connection with the arrangements for Congress, which were well in hand. They only hoped for fine weather and a good attendance. (Hear, hear.)

REPORTS OF SPECIAL COMMITTEES.—

(1) A further *interim* report was received from the Special Committee appointed "to investigate the question of dignified advertising by members of the veterinary profession, and methods of combating quackery."

(2) A further *interim* report was received from the Special Committee on Editorial Re-organisation, to which it was announced that Mr. H. P. Standley, Sen., had been co-opted.

Resolutions from Divisions

(I) *From the Western Counties Division*:—

"The Western Counties Division will support the N.V.M.A. in approaching the Ministry of

Agriculture in order to get deleted from its publications the detailed treatment of animals' (other than scheduled) diseases."

The Secretary read a note relative to this matter which had been left by Mr. Nelder (who had had to leave the meeting) suggesting that the resolution should be remitted to one of the Standing Committees of the Association.

The Council concurred, and it was agreed to refer the matter to the General Purposes Committee for consideration and report.

(II) *From the Central Division*:—

"That this Division recommends that the N.V.M.A. should collect evidence, lay information and be complainants on behalf of any member of the Association who desires to lay a charge of advertising or other misdemeanour against a fellow member of the profession."

Mr. Male said that he would like to propose that this resolution be referred to a Committee. It was a matter that required very careful consideration, and he thought there was a good deal that might come of it. The medical profession had a society—the Medical Defence Society—which dealt with matters of that sort, and in his view it was a matter that might well be considered.

Mr. McIntosh supported Mr. Male's proposal of reference to a Committee. In his view, a good deal of importance attached to that resolution, but as to whether it would be advisable or prudent for the National or any of its Divisions to undertake responsibilities of that kind, would have to be very carefully considered. He did feel that some provision of that kind was needed; many acts of unprofessional conduct were allowed to escape because individual members were not always prepared to appear as complainants, which was quite understandable. Moreover, it frequently involved an expense which made it prohibitive for many to undertake. The Council of the R.C.V.S. had no alternative but to drop proceedings in such cases. This, he thought, was very unfortunate, and unless some means could be devised, other than at present existed, it would always remain so and many members would escape from what was their just punishment, with the result that the reputation of the profession would continue to suffer. He had much pleasure in seconding Mr. Male's proposal.

The proposal to remit the resolution to the General Purposes Committee for consideration and report was carried by a majority.

The Secretary read a resolution, received since the preparation of the Agenda, from the Hon. Secretary of the Southern Counties Division, *re* the medical profession and animal welfare societies. After discussion, this matter was remitted to the Organising Committee.

The meeting terminated with the passing of a hearty vote of thanks to the President for his conduct of the proceedings.

N.V.M.A. Divisional Reports

LANCASHIRE VETERINARY MEDICAL ASSOCIATION*

A General Meeting of the Lancashire Veterinary Medical Association was held at the Grand Hotel, Aytoun Street, Manchester, on Wednesday, May 25th, 1932, at 2.30 p.m., with the President, John Spruell, Esq., in the Chair.

Others members present were Messrs. W. Tweed, G. H. Locke, J. O. Powley, J. Holroyd, C. F. Shawcross, H. Sumner, Jun., G. O. Davies, A. L. Bragg, S. H. Gaiger, A. W. Noel Pillers, R. C. Locke, R. Hughes, W. Woods, J. H. White, T. Wilson, E. H. Curbishley, H. T. Matthews, J. Lindsay, A. Alexander, and A. L. Mullen (Hon. Secretary). *Visitors*:—Messrs. A. Walker, D. S. Rabagliati, T. G. Millington, H. L. Torrance, J. Adamson, Jun., and G. K. Buckler.

Apologies for unavoidable absence were received from Messrs. G. Mayall, P. Manuel, J. Abson, S. Wharam, J. Cochrane-Dyet, Warwick Fowle, A. B. Kerr, and H. Holroyd.

The Minutes of the last General Meeting, having been published in the *Veterinary Record*, were taken as read.

A letter was read from the Secretary of the National Veterinary Medical Association enclosing copies of an article, "Some Recent Advances in Veterinary Science."

Membership. — Mr. A. B. Kerr, M.R.C.V.S., D.V.S.M., Chester (proposed by Mr. Noel Pillers), and Mr. J. Adamson, Jun., M.R.C.V.S., Bolton (proposed by Mr. G. H. Locke), were nominated for membership, while, on the proposition of Mr. G. H. Locke, seconded by Mr. R. C. Locke, Mr. J. G. Foulston, M.R.C.V.S., Oldham, was elected a member.

Donation to Veterinary Benevolent Funds.—On the recommendation of the Council, it was proposed by Mr. G. H. Locke, seconded by Mr. J. Holroyd, and unanimously resolved, that a donation of two guineas be sent to each of the two Veterinary Benevolent Funds.

Paper.—Mr. H. L. Torrance now presented his paper, entitled "The Detection of the Source of Infection in Tuberculous Milk," which is reproduced, together with the excellent discussion which ensued, elsewhere in this issue.

Vote of Thanks.—A hearty vote of thanks to Mr. Torrance was proposed by Mr. H. Sumner, Jun., who said that the paper was one of the most interesting and instructive that the Association had heard for a long time. The paper and material did Mr. Torrance credit as a veterinary surgeon and a very shrewd observer, and the Association were very fortunate and pleased to have had him at the meeting that afternoon.

* Received for publication June 20th.

Mr. Holroyd seconded the proposal, saying that the length of the discussion showed how interesting the paper had been and how much it had been appreciated. It was a long time since there had been such a long discussion at a meeting, which demonstrated the importance of the subject.

The President, in supporting the proposal, said the Association were pleased to have Mr. Torrance with them that afternoon, and expressed his thanks for the able way the essayist had answered the questions raised in the discussion. He hoped Mr. Torrance would again honour the Lancashire Division with his presence at an early date.

The proposition, when put to the meeting, was carried with acclamation.

Any Other Business.—It was proposed by Mr. Holroyd, seconded by Mr. Shawcross and unanimously resolved that there be four ordinary meetings and an annual meeting and that light refreshments be provided. It was also proposed that a lunch and tea be provided at the Summer Meeting from the funds of the Association.

There being no other business, the meeting was declared closed.

A. L. Mullen, *Hon. Secretary.*

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Central Veterinary Society's Visit to the London Zoological Gardens

A very enjoyable and interesting meeting of the Central Veterinary Society was held on July 7th at the London Zoological Gardens, under excellent weather conditions. The following members and friends attended: The President (Major Kirk) and Mrs. Kirk, Major and Mrs. Dunlop, Captain and Mrs. Dunlop Martin and daughter, Captain and Mrs. Stow, Major and Mrs. Moss, Mr. and Mrs. David Wyllie and daughter, Captain and Mrs. Balls and daughter, Mr. and Mrs. Beaumont, Mr. and Mrs. F. Willett, Mr. J. Willett, Captain W. K. Townson, Mr. and Mrs. Sthyr, Mr. and Mrs. Somers, Mr. Jelbart, and Mr. and Mrs. H. King.

After witnessing the most amusing chimpanzee's tea party, and the feeding of the lions and sea lions, the party partook of a very excellent tea which, by courtesy of Sir P. Chalmers Mitchell, was served on the Fellows' private lawn. No business of any kind was transacted during the afternoon and members were thus free to wander through the gardens with ample time at their disposal.

J. F. Macdonald, *Hon. Secretary.*

David H. Lloyd, Lampeter, was fined £20 for exposing for sale at the Swansea market a carcass of veal which was unsound and unfit for human consumption. In imposing the fine, the Stipendiary said that it was fortunate for him that there was no allegation of the meat being diseased, as the Court would have sent him to prison without the option of a fine.

In Parliament

Prior to the Recess, the following questions and answers were recorded in the House of Commons:—

HORSE-BREEDING GRANTS

Earl of Dalkeith asked the Financial Secretary to the War Office whether, in view of the recent reductions in the horse-breeding grants and the consequent danger of British light-horse breeding receiving a permanent set-back, he can state what steps he is taking to evolve alternative plans for encouraging such breeding?

Mr. Cooper: It is the policy of the Department to purchase as many horses as possible in the United Kingdom. Apart from this, no special steps involving further expenditure can be contemplated.

Earl of Dalkeith: Does the hon. Gentleman not consider that the small amount previously paid in grants has been well repaid by the improvement in the type of horses for the Army and the increase in the export of horses from this country; and is not the present decision false economy?

Mr. Cooper: Every suggestion for economy which is put forward is always represented to be false economy. This is a real economy, and a saving of money, and, unless we are prepared to carry through economies of this kind, there will be no economy at all.

Earl of Dalkeith asked the Financial Secretary to the War Office whether he has any information as to the total amount of money allocated to horse-breeding in France, Germany, and Italy during the past three years, either by way of Government grants, totalisator profit percentages, or other semi-official sources?

Mr. Cooper: I regret that I have no complete information, but I am informed that Italy makes an annual grant to horse-breeding of lire 2,000,000 for mules and lire 1,000,000 for horses; that in France there is State assistance; and that the various States of Germany grant subsidies.

Earl of Dalkeith: Does not the Minister realise that almost every large country in Europe is able to supply very large sums of money for horse-breeding, and that, if this country is the only one which is not doing so, it is likely to lose its pre-eminence in this line of business?

Mr. Cooper: This country is also the only country which is balancing its Budget this year.

The Earl of Dalkeith asked the Chancellor of the Exchequer whether it was upon his initiative that the Government grants-in-aid of horse-breeding have been reduced, or whether the suggestions for the recent reductions in such grants have originated from the Departments administering them?

The Financial Secretary to the Treasury (Major Elliot): The decision to discontinue the light horse-breeding subsidy was taken by His Majesty's Government following upon the recommendation of the Committee on National Expenditure.

HORSE BREEDING, IRELAND (GRANT)

Captain Hope (for the Earl of Dalkeith) asked the Financial Secretary to the Treasury whether, in view of the reduction in the grants for horse breeding, he will reconsider the advisability of the annual grant of £1,563 for the King's plates in Ireland?

Major Elliott: As my predecessors have explained, it was decided, in view of the special nature and long standing of this payment, to continue it after the establishment of separate Governments in Ireland.

Captain Hope: In view of the altered conditions in the Free State, will the matter be reconsidered?

EXPERIMENTS ON LIVING ANIMALS

Mr. Groves asked the Secretary of State for the Home Department the total number of experiments performed under licence by vivisectionists in Great Britain during 1930 and 1931 and the number where anæsthetics were compulsorily used?

The Under Secretary of State for the Home Office (Mr. Oliver Stanley): The figures for 1930 are given in the Annual Return of Experiments on Living Animals which was published last year. The return for 1931 is in course of preparation and will, I hope, be published shortly.

Mr. Groves: If I cannot get them from that source, will the hon. Gentleman try to let me have them?

Mr. Stanley: Perhaps the hon. Member will approach me on the subject.

Mr. Groves asked the Home Secretary the number of certificates granted by the Home Office in 1930, 1931, and 1932, respectively, to vivisectors for special experiments in feeding, including the giving of such diets that the animals cannot be sustained in life; what reports his Department receives upon the scientific results of such experiments; and whether he will consider refusing to grant any further permits for such practices?

Mr. Stanley: Experiments in feeding are carried on for many different purposes and it would require a long and laborious search to get the information asked for. My right hon. Friend regrets that he would not be justified in undertaking it. Every licence holder is required by a condition of his licence to furnish the Department with a copy of any paper which he may publish containing a description of his experiments. The power of granting certificates does not rest with the Secretary of State. Section 11 of the Act confers it on the scientific authorities there specified.

Mr. Groves: May I ask who appoints the body of scientific authorities which is responsible for issuing these certificates?

Mr. Stanley: If the hon. Member will read the Act, he will find it all set out there.

Mr. Groves: May I ask the hon. Gentleman to what Act he is referring?

Mr. Stanley: The Appropriate Act.

Mr. Groves asked the Home Secretary if he is aware that certificates granted by his Department to authorise vivisection experiments upon animals include operations which entail cutting out organs of the body and keeping the animals alive as long as possible under these conditions; and whether his Department imposes the obligation of the use of an anæsthetic in these cases?

Mr. Stanley: The Home Office has no power to grant any certificates; this can only be done by the scientific authorities specified in Section 11 of the Act. If the hon. Member will refer to the report prefixed each year to the Annual Return of Experiments, he will find it explained that in all experiments under Certificate B the operative procedures are done under anæsthetics.

Mr. Groves asked the Secretary of State for the Home Department the number of certificates granted by his Department in 1930, 1931, and 1932 to vivisectors which authorised experiments upon animals entailing the working of dogs and cats upon treadmills until overcome by fatigue?

The Under-Secretary for the Home Office (Mr. Stanley): None, Sir.

Mr. Groves asked the Home Secretary the names of the two experimenters who are authorised to perform operations upon animals without anæsthetics during the year 1930 at the place No. 222 registered for vivisection, and what scientific qualifications they hold for such work?

Mr. Stanley: The hon. Member will find the particulars he wants in the published return. I must add, however, that he is incorrect in stating that the persons referred to are authorised to perform operations upon animals without anæsthetics. As my right hon. Friend informed him on May 10th last, the experiments performed were feeding experiments only.

PIG INDUSTRY

Mr. Savery asked the Minister of Agriculture when the report of the Committee which is now considering the reorganisation of the pig industry is likely to be issued?

Mr. Lambert asked the Minister of Agriculture when the Pig Products Commission will issue its report?

Sir J. Gilmour: I am unable to say when the Commission will present its report, but I do not expect to receive it before autumn.

Sir A. Knox: In the meanwhile, will the right hon. Gentleman act on the recommendations of the Pig Industrial Council?

Sir J. Gilmour: No, Sir. The recommendations of the Pig Industrial Council are being considered by the Commission, and until they report on them I cannot take any action.

Sir A. Knox: Can the right hon. Gentleman give any idea when we will have the report? The pig industry is being ruined.

Sir J. Gilmour: No, but I think that it is anticipated that it may come sometime early in October.

FIGHTING SERVICES (MEAT SUPPLIES).

Major Braithwaite asked the Minister of Agriculture if he will help farmers in this country by making arrangements for His Majesty's Forces to be supplied with home-produced meat pending the results of arrangements to be made at the Imperial Conference?

Sir J. Gilmour: I would refer my hon. and gallant Friend to the full statement I made on this subject during the Debate on the Adjournment on March 1st last. For financial reasons it is not practicable for the Government to adopt his suggestion.

Mr. Lambert: Having regard to the deplorable position to the livestock farmer, could not the right hon. Gentleman consider easing the situation for them in the way proposed in the question, pending the result of the Ottawa Conference.

Major Braithwaite: Does not the right hon. Gentleman consider that there will be a greater financial loss to the Exchequer by the reduction of revenue from the farmers than by giving this small help to them at the present time?

DRUGS (MANUFACTURE)

Mr. Morgan Jones (for Mr. Rhys Davies) asked the Home Secretary what is the number of factories in this country engaged in the manufacture of opium, heroin, cocaine, and other noxious drugs, the amount of capital involved and the number of employees; and whether any of the supplies of these noxious drugs that are sold in London are of British manufacture?

Mr. Stanley: Seven firms are licensed to manufacture medicinal opium, two to manufacture morphine and heroin, and one to manufacture cocaine. The manufacture is carried on in connection with the manufacture of other things, and I am not able to say what proportion of the staff or capital is to be regarded as engaged on the manufacture of these drugs. I cannot assent to the description of these drugs as noxious. The abuse of them is a great danger, but they are invaluable when used medically. The greater part of these drugs used in this country for medical purposes is of British manufacture.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

Aug. 2nd.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

Aug. 8th-13th.—N.V.M.A. Jubilee Congress at Folkestone.

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N.V.M.A. CLINICAL PRIZE SCHEME FOR STUDENTS

All students who are eligible should lose no time in commencing with the compilation of notes of cases, seen in vacation practice, suitable for entering for the above competition. We wish to see a double-figure entry this year, and the long vacation, with its opportunities for case recording, soon slips away.

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PERSONAL

Marriage.—Goslin—Mulvey.—On July 9th, at the Cathedral, Chelmsford, by the Rector, Canon Morrow, Reginald Arthur John, only son of Mr. A. J. Goslin and the late Mrs. Goslin, of Manningtree, Essex, to Mabel Christiana, elder daughter of Lieut.-Colonel and Mrs. Mulvey, of Skansen, Chelmsford, and grand-daughter of the late W. J. Mulvey, J.P., and Mrs. Mulvey, of Chelsea, and of the late Mr. and Mrs. Henry Young, of West Ham and Chingford, Essex.

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Appointment.—The Ashton-under-Lyne Council has confirmed the appointment of Mr. G. Ellis, of Mottram-in-Longendale (County Veterinary Inspector), as Veterinary Inspector for the Borough in place of Mr. A. New, who has resigned.

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Will.—Davidson, Mr. John, M.R.C.V.S. (71), of Fenham, Newcastle-upon-Tyne (net personalty £10,999), £19,278.

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R.C.V.S. OBITUARY

Young, Harry Ashley, The Causeway House, Dunmow, Essex. Graduated London, March 28th, 1883; died July 9th, 1932, aged 69 years.

The *Essex Chronicle* states that the late Mr. Ashley Young had been unwell for a year with a heart affection, and had retired from the veterinary practice which he carried on in the Dunmow district for more than forty years. Mr. Young was noted for his great care of animals, and he used to run the dog and pony shows formerly held at Dunmow. Formerly he was a regular follower of the Essex Hounds, and was one of the finest judges of horses in England. For many years he was a member of the committee of the famous Dunmow Flitch Trials. A widow, three sons and one daughter survive.

At the funeral, which was held at Dunmow, a large company included Lieut.-Colonel W. S. Mulvey, O.B.E., T.D., F.R.C.V.S.

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The late Mr. R. W. Paley

In reference to the late Mr. Robert William Paley, whose death at the early age of 27 years was recorded by us last week, the *Walsall Observer* pays a tribute to Mr. Paley's great promise when a student at the Edinburgh College. Qualifying at the age of 23, he joined his brother, Mr. A. E. Paley, in the Marsh Street practice and later took charge of a branch at Sutton Coldfield, where for the past twelve months or more he had lived with his mother. "Both in Walsall and at Sutton he enjoyed the esteem and confidence of all who had occasion to consult him, and his untimely death at so early an age is mourned by a wide circle of clients and other friends."

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BRITISH MEDICAL ASSOCIATION CENTENARY MEETING

The centenary meeting of the British Medical Association was held at the headquarters, Tavistock Square, from July 22nd to July 30th, delegates being present from branches of the Association in all parts of the Empire and from kindred bodies in foreign countries. Dr. E. K. le Fleming presided at the annual representative meeting, when it was agreed that Professor Thomas Gillman Moorhead, Regius Professor of Physics, Trinity College, Dublin, should be elected President of the Association for 1933-34.

Dr. Morton Mackenzie, chairman of the Organisation Committee, said that this was the first year that the membership of the Association had not increased; it had fallen by a very small number. The rise in the whole medical register for the last year had only been some 300.

A recommendation from the Council with reference to notification to the profession when a practitioner intends to commence specialist practice was submitted by Dr. Arnold Lyndon, chairman of the Central Ethical Committee, and was carried in the following amended form:—

"That the Representative Body expresses the opinion that a practitioner who wishes to draw the attention of his colleagues in the profession to the fact that he has recently commenced or intends to practise any particular branch of medical or surgical work, may do so in any or all of the following ways:—By calling upon practitioners already established in the area and giving a personal explanation of his arrangements and plans; by sending a sealed postal notification to those practitioners who may be expected to be interested, provided such a communication contains no laudatory allusions to himself or his work; by communications on professional subjects presented to the local divisions of the B.M.A., or to other medical organisations; by sending reprints of his published work to those practitioners who may be expected to be interested."

Lord Dawson of Penn was inducted President for the centenary year, and later, at an extraordinary meeting, the presentation to the Association of the portrait of Dr. Alfred Cox, the medical secretary, took place, on the occasion of his retirement. Dr. Cox was presented with a book containing the names of the subscribers to the testimonial fund and a cheque for £1,000.

On July 24th the members made a pilgrimage to Worcester to pay honour to the memory of Sir Charles Hastings, a doctor of the city, who in 1832 founded the Provincial Medical and Surgical Association. It was through this original effort, inaugurated by Hastings in the boardroom of the Worcester Infirmary, to improve the position and organisation of the medical profession that the powerful B.M.A. of the present time had its inception, and the ceremonies included the unveiling of a memorial window in the Cathedral to the founder, and the presentation to the Association of the original of a well-known portrait of Sir Charles Hastings.

XUM

RECORD AUCTION PRICE FOR A THOROUGHBRED

The thorough-bred stallion, Solario, ten years old, was sold by public auction at Newmarket recently for 47,000 guineas. The buyer was Lord Glanely, on behalf of a British syndicate. An American syndicate was running up. This is a record auction price for a Thoroughbred.

Solario was got by Gainsborough, out of Sun Worship. His former owner, the late Sir John Rutherford, purchased him as a yearling for 3,500 guineas. He won over £20,000 in stake money, his successes comprising the St. Leger, the Ascot Gold Cup, the Princess of Wales's Stakes, the Ascot Derby, the Coronation Cup, and the Exeter Stakes, and since he has been at stud he has sired winners of over £38,000, including Orpen, Dastur, Orta, Sunny Devon, Rose en Soleil, Andrea, and Solar Boy. The previous record price for a racehorse sold by auction was 37,500 guineas, paid for the late Duke of Westminster's Flying Fox at Kingsclere in 1900. Higher prices have been paid for horses sold privately. Senor Unzue of Buenos Aires is stated to have paid £53,000 for Tracery, the St. Leger winner; Captain Cuttle was sold for £50,000 a few years ago to go to Italy; Mr. J. B. Joel paid £40,000 for Prince Palatine, and the Derby winner Call Boy was sold at £60,000.

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SCOTLAND'S RECORDED COWS

It was claimed, at a meeting of the Scottish Milk Records Association, that, with the exception of Denmark, Scotland contains a higher proportion of officially recorded dairy cows than any other country. There were 831 herds recorded in Scotland last year, officially and unofficially, the total number of cows recorded being 32,688. The proportion of good-milking cows and heifers to the total animals tested has increased from 39½ per cent. in 1914 to 72¼ per cent. in 1931, while the proportion of obviously unprofitable animals has been reduced in the same period from 9 per cent. to 1½ per cent.

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Errata.—In the abstract "The Course of Infectious Abortion in a large Herd of Cattle" (*V.R.* Vol. xii, No. 30, p. 856), on page 857, col. 2, line 16, for "nine virulent strains" read "more virulent strains," and in line 29, for "nine virulent types" read "more virulent types" (of organism).

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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CALCIUM TREATMENT OF MILK FEVER

To the Editor of the Veterinary Record.

Sir,—Having been away from home I have not previously had the opportunity to thank Mr. Tutt for his reply to my letter concerning the above.

In spite of his assurance to the contrary, I do not consider that he "expressly stated" in his previous letter that "the treatment and technique was that as advised by Mr. Hepburn." It is now quite clear, however, that Mr. Tutt has attempted to emulate Mr. Hepburn, but unfortunately the results obtained do not compare very favourably. Although Mr. Hepburn's technique differs somewhat from my own I have no doubt that it is equally efficient and I can only suggest that Mr. Tutt has not carried it out "to the letter."

His failures are probably due to one or other, or a combination, of the following:—

(1) Using a solution of calcium gluconate stronger than 5 per cent.;
(2) Injecting the whole quantity at one place. (In this respect he does not adhere to Mr. Hepburn's instructions!);
(3) Making the injection too deeply;
(4) Insufficient aseptic precautions.

Despite Mr. Tutt's remark in last week's *Record*, "I decline to believe that filtering is not necessary," the fact that I do not get sloughs or abscesses when using an unfiltered solution of calcium gluconate should be sufficient proof that it *is* unnecessary to filter even when the water is very hard and chalky, as is the case in this district.

In conclusion, I hope that other practitioners—especially "the well-known and distinguished member of the profession" who "did not consider it of any use whatever"—will report their experiences with calcium.

Undoubtedly many like myself lack literary ability and time, but if they have successfully used calcium in the treatment of milk fever a brief letter in the *Record* would help to dispel the doubts of the cynics.

Yours faithfully,
Cyril R. Golledge.

Staddlecote,
Trowbridge, Wilts.
July 25th, 1932.

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CALCIUM THERAPY: A POINT IN TECHNIQUE

To the Editor of the Veterinary Record.

Sir,—When one has followed the recent correspondence on the use of calcium injections for the treatment of milk fever, one can fully appreciate the reluctance some practitioners have in continuing in their use, in view of the disastrous results which have followed in many cases.

One reads of the lengthy struggles in preparing sterile solutions from the powder; of the obvious difficulties in making several small injections in different parts of the neck, and also of the regrettable results that have sometimes followed the use of the intravenous method.

I myself have used both calcium gluconate and dextro-calcium since January, 1930, and have never yet had any trouble after injection. Firstly, I ought to say that I have always used the ampoules of the solution, as supplied by the makers. I use it direct from the ampoule, and for the injection use a Record 50 c.c. syringe.

After swabbing a patch of skin, half-way along the back and a few inches to one side of the median line, with tinct. iodine, I insert a large-bore hypodermic needle and inject the whole quantity to be used, either one or two ampoules, into that site, re-swabbing on withdrawing the needle.

I have had no ill results from using this site, and though one realises that the originators of this treatment advised the injections to be made in several places in the neck, it seems that the "back" injections are less likely to give bother and, incidentally, are far simpler to administer.

In conclusion, I ought to say that I have occasionally had local reactions to the solution, when used in horses and dogs, but massage with iodine oil or ointment has removed the swelling without further complications.

Yours faithfully,
H. W. Brekke.

East Mount,
Malton, Yorks.
July 23rd, 1932.

Professor J. B. BUXTON, M.A., F.R.C.V.S., D.V.H.,
President, Royal College of Veterinary Surgeons, 1932-33.